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Original Articles

THE NATURE AND TREATMENT OF BRONCHIAL ASTHMA

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Mrs. H. had suffered from asthma for a number of years, the attacks usually being followed by persistent bronchitis with considerable expectoration. There were occasional periods of comparative freedom but during the winter months she was compelled to seek a mild, equable climate. At length her condition grew so bad that in October, 1912, she took to bed and the author was asked to see her. The examination disclosed the usual findings of chronic bronchitis with emphysema and the patient's breathing was characteristicly asthmatic. From the history it seemed quite reasonable that the seat of the mischief lay in the upper respiratory tract, and she was advised to consult a nose and throat specialist. Several months later this patient reported as follows:

The specialist discovered an infected antrum which he punctured and drained. For three months the lady was free from asthma. She then took cold, the middle turbinal swelled, blocked the opening into the sinus and stopped the drainage. Thereon her asthma promptly returned and at the time of her report she was having vaccine made from her sputa in the hope of curing her bronchitis.

Let us see if in this case there are any facts which throw light on the nature of bronchial asthma. The one fact that stands out conspicuously is the relief that followed drainage of the maxillary sinus and the recurrence of symptoms when drainage of the antrum was checked. Evidently a close connection existed between the free discharge of pus from the sinus and the disappearance of the asthma. How then can this connection be explained? Was it a reflex, one brought about through the central nervous system? or was the relief only accidental, a *post hoc* and not a *propter hoc,* as we say? Until three years ago no satisfactory explanation of such a connection was to be had, but now, thanks to the doctrine of anaphylaxis an all sufficient explanation is at hand, an explanation moreover which is not theoretical but is founded on scientific data. That the reader may understand how this doctrine of anaphylaxis accounts for bronchial asthma we must state briefly the principles underlying anaphylaxis.

PRINCIPLES OF ANAPHYLAXIS

By this term is meant a protein sensitization or hypersensitiveness to some foreign protein which is introduced into the system of an animal either by way of the alimentary tract or parenterally, that is, by injection into a vein or into the peritoneal cavity or under the skin, in any way in short, that permits its absorption. The protein thus introduced may be stable, such as egg albumin, serum albumin, the tox-albumin of a plant, etc., or it may be labile and active as bacteria. So soon as the protein enters the system certain cells of the animal generate a proteolitic ferment the specific function of which is to attack, split up and destroy the foreign protein.

If the amount first introduced be not too large no symptoms are produced, but when after a lapse of fourteen or more days a second injection is made, definite symptoms occur which indicate what is known as anaphylaxis or the anaphylactic shock. If this shock be sufficiently severe, death is the result. In the splitting up of the protein molecule, two elements are liberated which Vaughan likens to the acid and alkaline constituents of a salt. One of these is the posionous or toxic group, while the other or basic group of the protein molecule is that which gives the characteristics to the protein, and it is this latter or secondary group, as Vaughan calls it, which sensitizes the animal.

Let it be remembered, however, that whether the animal is to be rendered immune or is to be sensitized and show phenomena of anaphylaxis

depends on the length of time allowed to elapse between the first and second injection. In other words, if the protein be introduced at short and successive periods and in doses which the animal cells can dispose of, immunity becomes established, but if the second injection follow the first after two weeks or longer, sensitization or anaphylaxis and not immunity is the result. Two other facts also must be borne in mind, namely, the cells of the animal body may store up their specific proteolytic ferment for a long time, months or even years, and the change in the body cells may be so profound as to be handed down from mother to child. Again, it is perfectly possible for an animal to become sensitized to any number of proteins and not merely to one.

ANAPHYLAXIS AS RELATED TO ASTHMA

But some one may ask what bearing has all this on bronchial asthma or what has led to the view that an asthmatic paroxysm is a manifestation of anaphylaxis. In reply it may be stated that the likelihood of such a connection seems first to have been suggested by the behavior of guinea-pigs during an anaphylactic shock. Auer and Lewis found in sensitizing these animals to a foreign protein that they displayed symptoms clinically identical with those of an asthmatic attack. Furthermore, when death occurred and the lungs were removed the bronchioles were found stenosed through firm contraction of the circular or constricting bronchial muscles. It was impossible, indeed, to force any more air through the contracted bronchi into the emphysematous lungs.

In addition to these observations of Auer and Lewis, Rosenau and Anderson direct attention to the dangerous and even fatal anaphylactic shock produced in some asthmatics by the injection of diphtheria antitoxin or other sera derived from horses. Quite a number of such cases have been reported, and in all such it was found that the individuals were sensitive to eminations from horses, and apropos of the well-known fact that some asthmatics always experience an attack when in proximity to horses; it has been stated that the fine hairs from these animals contain enough protein to affect a sensitized individual.

The facts thus briefly stated have led workers in this field of protein sensitization to advocate the view that bronchial asthma can no longer be regarded as a result of reflex disturbance of the nervous system or as a mere neurosis either inherited or acquired. There may be, it is true, some peculiarity of the nervous system or physical idiosyncracy, as it were, which causes some persons the same as some animals, guinea-pigs, e. g., to display respiratory phenomena as a manifestation of anaphylaxis, while others do not, or, as in the case of dogs, show profound disturbance of the gastro-intestinal tract.

Lastly there are some facts regarding the prevention of anaphylaxis which have a bearing on the influence of certain remedies in relieving an asthmatic paroxysm. For instance, Besredka, a worker in the pasteur laboratory, has found that alcohol and ether are capable of preventing for a time at least the development of anaphylaxtic symptoms. So likewise in asthmatics the ingestion of whisky or the inhalation of ether may cut short an attack and render the individual entirely free from dyspnea for days or even weeks. Thus in an instance known to the author, a man who had suffered from asthma in an aggravated form for several months was so thoroughly rid of dyspnea for three weeks succeding a tonsillectomy with ether anesthesia that both he and his physician were congratulating themselves on his cure when coryza again set in and was promptly followed by a return of the asthma.

Whether morphin, heroin and so-called asthma powders act as a prophylactic as do alcohol and ether, or whether they relieve temporarily by simply overcoming bronchial spasm and hyperemia can not be stated definitely. But in the beneficial effect of ether and alcohol is to be found corroborative evidence in favor of the anaphylactic nature of bronchial asthma.

In the light of above facts, how is to be explained the case briefly narrated at the opening of this paper? It is really quite simple! The infected antrum was a focus from which bacterial protein was absorbed, the original sensitization having occurred many years before. At times, doubtless owing to favorable weather conditions perhaps, drainage through the nose lessened absorption, but with the advent of winter conjestion of the turbinates increased, protein absorption became greater and anaphylactic symptoms in the form of asthma became intensified. As time went on chronic bronchitis was added and the patient's state became truly pitiable. Then was instituted adequate drainage of the antrum, absorption was prevented and the asthma, that is, the anaphylaxis disappeared. When, however, drainage was again stopped in consequence of a coryza, symptoms returned with all their former severity.

NASAL ASTHMA

In the author's opinion the foregoing is a fair sample of the many cases of what may be called

nasal asthma. In many persons this malady develops after adult age has been reached and the individual soon manifests more or less persistent dyspnea with frequent, perhaps daily exacerbations that merit the name of bonchial asthma. In several such cases seen in the last few years there has been a history of the trouble developing a few weeks subsequent to a severe rhinitis or what the patient has termed "a grippe attack." Some of these sufferers had been examined by specialists and some had been subjected to an operation such as removal of a bony ridge on the septum or a hypertrophied turbinal body. But an infected nasal accessory sinus or a chronic ethmoiditis had not been detected or at all events not treated. The point is, that the operative treatment had not removed the focus from which absorption of bacterial protein took place. In some cases such protein sensitization may have resulted from purulent of mucopurulent secretions pent up within the nasal canal. Justus Matthew mentions such instances which operated on at the Mayo clinic had experienced relief if not cure of asthma.

Perhaps the most frequent finding in connection with asthma are nasal polypi, and often the operator contents himself with the removal merely of the polypi without eradicating the disease of the ethmoid responsible for the polypi This is a mistake for, as Offennorde has pointed out, chronic hyperplastic ethmoiditis in which there is no recognizable discharge, is the focus from which the foreign protein is absorbed and creates the anaphylactic symptoms in the guise of bronchial asthma.

When Hack thirty years ago called attention to nasal defects as the cause of asthma no one knew anything about anaphylaxis and it is not strange therefore that since then numberless operations have been performed within the nose and throat without affording the relief anticipated. The specialist who will cure asthmatics with nasal abnormalities must bear in mind that his work is not complete until he has sought diligently for foci of infection and either has removed any such or has provided for free drainage. In some cases doubtless it may be necessary to have cultures made from the secretions and institute treatment with autogenous vaccines. Some favorable reports have been made from the employment of stock vaccines, but their use is not advisable and may be dangerous.

ASTHMA CAUSED BY OTHER CONDITIONS

Numerous as are the cases of nasal asthma an individual may develop asthma from a protein derived from some other focus of infection. Thus a certain physician who had suffered from bronchial asthma for many years developed symptoms of gall-stones and had his gall-bladder opened and drained. To his astonishment his old enemy, the asthma, was so much relieved that he was able to remain at home and attend to practice the following winter, a thing that had not been possible for many years.

The author has been told of a case in which an old-standing asthma was entirely relieved after an operation for a chronic appendicitis. He knows also of a woman who although a victim of hay-fever had never suffered from asthma until after having acquired a pyosalpynx. This was five years ago, and from that time on she has had bronchial asthma in an aggravated form. In her case there is sensitization to more than one protein, as shown by the effect of the pus-tube infection and the local sensitization of her nasal passages in the form of hay-fever. Such a person is particularly sensitive to protein absorption from whatever source or of whatever kind. Hence in the investigation of a case of bronchial asthma one must bear in mind the fact that an animal can be sensitized to any number of proteins.

This brings us to the consideration of those cases in which the asthma has developed in childhood and in which the asthmatic siezures occur with some degree apparently of periodicity. For many years there are asthma-free intervals when the individual feels well and experiences no dyspnea. With the passage of years, however, a tendency to chronic bronchitis and emphysema appears and the individual shows he is asthmatic by his wheeziness of voice and breathlessness.

In this class of cases the agent capable of exciting an attack is usually well known, as emanations from horses, cats, geese, dust from the street, pollen of plants, certain articles of food, etc. Whatever the exciting cause may be it contains a foreign protein to which the person has become sensitized some time in the past. If there is an inheritance of asthma from a parent this is explicable on the postulate either that the hypersensitiveness was handed down from the parent or that in consequence of inheritance he becomes easily sensitized to proteins. The liability of certain foods to evoke a paroxysm is to be explained as follows. In the process of digestion protein is split up by the digestive enzymes and transformed into amino acids. These are absorbed and then reunited or changed back into the kind of protein suitable for the particular animal that has ingested it. It is quite possible, however, that owing to a disproportion between

the amount of protein, cheese, lobster meat, egg albumin, etc., consumed and the ability of the digestive enzymes to split it up, some of the protein is absorbed directly as such, before being converted into amino acids. Thereon the proteolytic cells of the host attack and split up this foreign protein into its two groups previously mentioned. Sensitization occurs and if after a suitable lapse of time this food be again eaten and absorbed as before, symptoms of anaphylaxis appear. In one person these may be fever and urticaria, while in another asthma is the result.

To the author this theory or rather this scientific fact of anaphylaxis renders the nature and cause of bronchial asthma clear and simple. The only point still obscure is as already mentioned the reason for the development of asthma in one person and not in another. For the present, therefore, we can only assume some underlying peculiarity or idiosyncracy, which, however, does not materially affect the essential nature of the malady. Moreover in this interpretation of the etiology of this distressing malady lies the possibility of a more efficient treatment than has been the case hitherto.

TREATMENT

This conception of bronchial asthma makes it incumbent on the physician as the preliminary step in management to search diligently for the focus of infection that this may be eradicated by operative interference if necessary. Of course, in cases sensitized to animal or plant eminations, etc., the exciting agent can not be killed off or removed and the individual must avoid exposure to the cause and if this be not possible palliative measures must suffice. But in most if not all instances of the malady some focus exists within the person's own organism from which protein is absorbed. Careful inquiry into the anamnesis will usually direct attention to the probable location of such focus. Thus if, as in cases known to the author, it be discovered that the asthma developed after a severe coryza with profuse purulent nasal discharge, there is strong likelihood of protein absorption from a maxillary sinus or the ethmoid cells. In the latter case it should be kept in mind that hyperplastic ethmoiditis does not show itself necessarily by discharge, but may reveal itself by polypi. In any such case medicinal or palliative measures are ineffectual and only radical operative procedures can avail to prevent further anaphylaxis.

One should remember furthermore that asthma may result from chronic appendicitis, chronic cholicystitis, pyosalpynx or disease of any other structure giving rise to long-standing infection. In the great majority of instances, however, it is disease of the upper respiratory tract that is responsible for the asthma. If chronic bronchitis becomes added and the air tubes contain purulent or mucopurulent secretions they may furnish an additional focus from which the anaphylactic poison may be absorbed. Accordingly such chronic bronchial catarrh must be treated by suitable remedies or even a change of climate. An enumeration of various expectorants would be unnecessary but of them muriate of apomorphin in doses of a quarter to half a grain by mouth in syrup of hydriodic acid is often very efficient. These and even larger doses can be tolerated without producing nausea, as was pointed out by Murrel and the author many years ago. Aspidospermin one half to one grain three or four times daily is often very beneficial, but a combination that has often done good service is the following:

℞ Tr. Lobeliae, 20 c.c.; Ext. grindeliae robustae fl., 30 c.c.; Syr. acidi hydriodici, q. s. ad, 130 c.c. A teaspoonful in water three to four times daily.

Whatever means is employed to lessen or remove the chronic bronchial catarrh and associated emphysema is likely to prove only palliative at the best. The frequent recurrence of asthmatic paroxysms will keep up the pulmonary changes and hence the spasms must be cut short or prevented if possible. A remedy that has grown into favor the past few years is adrenalin applied to the nostrils or thrown beneath the skin in 10 to 15-drop doses so soon as the asthma sets in. Relief in some cases is prompt and pronounced, while in others it may be necessary to add from a twelfth to a sixth of a grain of heroin to the adrenalin. Unfortunately patients are likely to wear out the effect of these remedies, so to speak, and eventually may have to resort to them a number of times before their asthma is wholly relieved. Many other remedies are efficacious in overcoming a seizure, as morphin hypodermically, inhalations of chloroform or ether or resort to whisky in large doses. These all have their drawbacks as well as carry the danger of the formation of a drug habit. Pyridin, which is a volatile liquid, may be inhaled from a handkerchief and often affords prompt relief. But it is likely that the asthmatic will adopt in time some favorite asthma powder which gives him more satisfaction than anything the doctor may advise.

Whatever may be the remedy that is found efficacious its effect is but transient and the sufferer is likely to go on for years unless permanently cured by change of residence or operation. The treatment of this affection has been and still will

remain unsatisfactory so long as the exciting cause is not discovered and removed. It is for this reason that the author feels impelled to insist on the necessity of thorough investigation of the nasal passages and their accessory sinuses, since he believes that in a far greater proportion of cases than is realized the protein which brings about the anaphylactic symptoms is absorbed from some one of these cavities. In particular the rhinologist must leave no effort undone to satisfy himself of the existence or not of hyperplastic ethmoiditis, since even without polypi or a purulent discharge it may exist and may afford the condition required for the production of anaphylaxis and bronchial asthma.

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SCHOOL HYGIENE, OR THE HEALTH AND PROGRESS OF THE SCHOOL CHILD*

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This is a topic of vast importance, and one which should enlist the interest and sympathy of everyone in this audience. You will, of course, understand that in a brief paper, such as I am presenting to-day, it is quite impossible to do more than to briefly sketch this subject to you, and to merely touch on its almost endless phases, stopping to dwell here and there for a few moments on some of its most salient features.

ARE WE GOING TO GIVE OUR CHILDREN A "SQUARE DEAL"?

The question in a nut-shell is this: Are we going to give our children a "square deal" in our public schools? Are we going to invite or compel them to attend school and then fail to deliver to them what the citizens of this country pay for and have a right to expect? Are we going to diminish crime and poverty by educating the children under the best possible auspices? Are we going to materially lessen epidemics, sickness and bodily defects by the universal standardization and adoption of a proper search for diseases and defects in our public schools? Are we going to strengthen our nation intellectually, physically and morally by improving and increasing our educational facilities and possibilities through the avenue of placing the children of our country in a better physical condition? These are questions for us as citizens and doctors to decide, and these questions embody the text on which I wish to talk to you to-day.

THE PRESENT SCHOOL SITUATION

Let us start with the school houses of the United States, and endeavor to frankly and truthfully view the situation as it really is. We have some beautiful school buildings in this country, but we also have some buildings where, as Governor Ferris of Michigan recently said in his inaugural address, it would be unfit and unsanitary to stable horses and cows. We have some school houses without windows, where all the light and ventilation come from the door. We have some school buildings that apparently do not shock the sensibilities of the health and educational authorites, nor those of parents and other citizens, where children are being blinded (or nearly so) by insufficient and improper illumination, bad text-books and from contagion. In other schools tuberculosis, pneumonia, measles and the other contagious diseases of childhood originate and prosper through unhealthy surroundings. Some schools are so cold and draughty that children are constantly chilled, while others are so hot and poorly ventilated that mental activity is almost impossible.

The best heating and ventilating systems should be in all schools, and the windows should be thrown open from time to time to thoroughly purify the atmosphere. The temperature of school rooms should be systematically observed, and it should be remembered that mental work can be best accomplished and good health secured and retained at a temperature of about 68 degrees.

Some schools encourage crooked backs by bad desks and chairs, while others spread contagion by unsanitary lavatories, roller towels and the common drinking cup. In many schools, children are penned in like cattle with totally insufficient means of escape, and could easily be burned to death as fire attacks the tinder box, called by courtesy a school house. In some schools the physical well-being of pupils seems to have been deplorably neglected, and but little (if any) attention is paid to the indoor and outdoor exercising gymnasium, playgrounds, bathing facilities, proper food, etc., etc. And so I might go on almost indefinitely disclosing the truthful conditions of many school houses; but time presses and I will only add that bad school buildings should be torn down and new ones built, and that school buildings should be erected in healthy, quiet, locations with ample surrounding spaces for air, light and play, and that they should be built by architects who know this special line of work, and that they should con-

* Read before the Tennessee State Medical Society, 1913.

tain every modern and well-tried device that encourages health and easy intellectual and useful progress. These views should be especially emphasized, as in thirty-six of our forty states, school attendance is compulsory.

I wish to protest against the prevalent custom of almost invariably building our best building for high schools, and leaving the youngest children to occupy the poorest buildings. The best buildings should be given to the very young, for it is during the earliest period of school life that children's bodies and characters are most susceptible to surrounding influences. I wish that all children might go to school in proper buildings, but if a choice must be made, by all means give the best to the youngest children.

It is, indeed, surprising that, notwithstanding the fact that the proper building and equipping of school houses is a public affair of vital importance to individuals and to the nation, Ohio is the only state that has seen fit to pass laws calculated to regulate such matters.

THE GREATEST ASSET OF A STATE

The child is the greatest asset of the state. We are educating and rearing a nation that shall be useful in times of peace and in times of war. Our men and women should be big and strong, physically, intellectually and morally. It rests with each mature generation to mould and shape the coming generation. The most important place for this essential work is in the great melting pot of the nation—the public school. Here the children come together and mingle; here they secure at least temporary relief from homes of squalor, destitution and crime. Here we have the opportunity to shape, educate and direct their minds, bodies and souls. Let us not neglect the public schools, the means whereby we can produce the highest types of manhood and womanhood. I herewith desire to endorse the attitude taken by many of our boards of education, and recently emphasized by Mayor Harrison of Chicago, that our schools should be the social centers of their neighborhoods, for those who desire to so utilize them. Meetings, social gatherings, entertainments, etc., should be encouraged to go to the public schools, and the people of the various neighborhoods should be made to understand that these buildings belong to them, and can be utilized for all proper and legitimate functions.

STATISTICS

I have gathered together some figures and statistics on the subject of our public schools that I hope may serve to impress on you the importance of our schools, and the intimate relationship existing between them and the health and welfare of our nation.

In the first place, there are in this country 20,000,000 school children, or 20 per cent. of the entire population. Seventy-five per cent. of these children are suffering from some partially, or completely remediable defect, which is more or less interfering with their physical, mental and moral advancement.

500,000 have organic heart disease.
1,000,000 have spinal curvature, etc.
1,000,000 have tuberculosis.
1,000,000 have defective hearing.
5,000,000 have defective vision.
5,000,000 have malnutrition.
6,000,000 have operable tonsils and adenoids.
10,000,000 have defective teeth.

Seventy-five per cent. of the deaths in the Unted States are due to contagious and epidemic diseases that could in most instances be controlled and suppressed by proper medical school inspection.

There are 260,000 schools in this country valued at $850,000,000; they cost about $500,000,000 a year to maintain. No other investment pays so well. More money spent for schools means better schools and teachers and scholars, and this means better citizens, less crime and more money.

Forty-four million dollars are invested in the public schools of New Jersey alone, costing $13,000,000 a year to run. There are 500,000 pupils in the state, with a possible attendance of 71,000,000 days, and yet owing to the absence only 9,000,000 of these days were utilized. Seventy-five per cent. of these absences was due to sickness, representing a loss to the state of about $3,750,000. Unquestionably, proper medical school inspection would have largely obliterated such an intellectual, moral and financial loss to the state. In searching for a remedy for this and other ills connected with the health and learning capacity of children, Dr. Ayers points to the confusion existing in this country. Some states and cities have laws that are probably not carried out, while other states and cities have none. Scarcely any two laws concerning medical school inspection are the same. There should be a universal adoption and standardization of such matters in every state in the Union. Dr. Ayers has a bill before his state legislature and hopes to create the office of State Supervisor of Medical Inspection of Schools. The entire cost of this organization will not exceed $15,000 per annum. It will be the officer's duty to create and enforce

uniform rules concerning the health and well-being of the children of the state, including the plan of medical school inspection. He will instruct and encourage all those who are assisting in carrying out this work throughout the state. This plan should be adopted in every state in the Union, and the benefits that would thereby be produced would be simply incredible.

About one house burns down for every school day in the year. What an opportunity for better buildings?

We have about 500,000 teachers, 78 per cent. of whom are women. They are practically all underpaid, considering the high character of the work required, and considering that they are rearing the coming generation. Their pay averages $40 per month, or less than the average day laborer. In some states teachers earn less than $150 a year. They pay the highest average salaries in California ($918), and the lowest in North Carolina ($200).

There are about 300,000 blind people in the United States, costing about $15,000,000 to support, and most of this blindness could have been prevented by proper medical school inspection and subsequent medical care. About 75 per cent. of American children have some eye, ear, nose or throat disease or defect which is seriously interfering with their educational progress. Most of these children can be relieved by proper treatment. It costs, in England, about 23 pounds per annum to educate a deaf child, while a normal child can be educated for 14 pounds per annum. In New York, with a school population of 650,000, 30 per cent. of the children are two years behind their grades, and 90 per cent. of this is due to abnormal eyes, ears, noses and throats. Dr. Cravin found in one New York school 150 defectives who were backward in their studies and incorrigible in their characters. One hundred and thirty-seven had bad tonsils and adenoids and thirteen had defective vision. After these conditions were removed all of their characters and school standing rapidly improved. Forty thousand Minnesota children are retarded one year in their studies by adenoids. This costs the state $1,000,000, which could all be saved by 40,000 simple operations.

Ninety per cent. of school children have decayed teeth and deformed mouths. Decayed teeth produce pain, diseased mouths, germ saturated food, poor mastication and digestion, intestinal toxemia and impaired nourishment and bodily resistance. Dr. Osler declares that bad teeth are a greater misfortune to the world than alcohol, and I believe this statement can be substantiated. In Vienna they have formed a society for the care of children's teeth, with buildings in all parts of the city. They preach the gospel of good teeth and clean mouths to children and their parents. The Forsyth Brothers have erected a $1,500,000 building in Boston for the same purpose. Free dental infirmaries are now at work all over this country; but I would recommend that dentists who work in such institutions receive a reasonable remuneration for their arduous labors, as free service is too much to ask of dentists, and it has been shown in many places that the work languishes where no compensation is forthcoming. Children should not only have their diseased mouths regenerated, but they should be taught how to take care of their teeth by personal demonstrations and leaflets distributed to them and to their parents, as is done in Denver and other places. One of the large packing houses of Chicago, realizing that good teeth are an important factor in the maintenance of physical equilibrium, and that bad teeth induce poor health, pain, absence from business, the use of liquor, etc., has lately established at the yards a dental infirmary, where their employees may be cared for at practically no expense. The company pays the bills and considers it is saving money by so doing.

Dental infirmaries may be separate institutions, or they may be connected with other free dispensaries accessible to school children, either connected directly with the schools, or situated so as to accommodate an extensive neighborhood and a number of schools.

EXAMINATION OF SCHOOL CHILDREN

I have for years been interested in the examination of school children's eyes, ears, noses and throats by school teachers, and for this purpose have devised a series of nine questions, the answers to which will disclose the existence of at least 90 per cent. of serious disease, or defects of these organs. Teachers are perfectly competent to make these tests, and a child can be readily examined in five minutes. If a defect is found, a "card of warning" is sent to the parents, urging action in the matter. A vast majority of children (over 75 per cent.) suffer from such defects, that are more or less preventing satisfactory school progress. A child whose eyes prevent comfortable study, or whose deaf ears render easy communication with those around him impossible, becomes retarded in school, discouraged and careless, truant and idle, and ultimately very likely leaves school, forms habits of idleness and vice, and not infrequently joins the criminal classes and becomes an expense and a charge to the state,

in reformatories or prisons. To permit such children to follow such a program is neither economical, philanthropical nor wise. Such defects should be systematically discovered and relieved (especially as the expense is almost nothing), after which the dull student may become bright and the hardship of study transformed into a pleasure. Even in cities having medical school inspection, I believe it much better to have these eye, ear, nose and throat tests made by either the teachers or the school nurses. Any intelligent teacher can make them. The doctor to whom the child goes will diagnose and treat the disease or defect. A day in the early fall should be annually devoted to these tests, and by so doing, and by a subdivision of the work so that each teacher makes the tests in her own room, an entire city can easily be examined in one day. Or if this idea be deemed inadvisable, a few children can be kept after school during a certain week in each early fall, and at the expiration of the week all the children will have been examined.

If in the state of Tennessee you are not fully prepared to go into the matter of general medical school inspection, you can at least have these simple, cheap and efficient tests made, for by so doing you will accomplish a vast amount of good at practically no expense and no trouble. No teacher should feel that these tests are an additional labor, for they are but little trouble, and in the end will repay the teacher a thousand fold in reducing her work by changing stupid, exasperating children into bright and agreeable scholars, after their eye, ear, nose or throat defects have been relieved.

Dr. Hoag of California, now working with the Minnesota State Board of Health, at the suggestion of that best of secretaries, Dr. H. M. Bracken, has devised a series of questions which enlarges on my method. I proposed years ago that an annual systematic examination of school children's eyes, ears, noses and throats should be made by teachers. Dr. Hoag goes further, for he proposed by similar simple questions and observations made by the teachers to include practically the entire body. His questions are subdivided off into groups, such as "Eye," "Ear," "Nervous System," "Teeth," "General Condition," etc., etc. The teacher fills out the answer to all the questions, after which a very good idea of the child's health and condition can be formed. If the child is defective or diseased, the parent is then urged to seek the advice of a reputable physician. Dr. Hoag has his headquarters at the Capitol building in St. Paul, and holds himself in readiness to go wherever called to make health observations and to give instructions to school authorities, how they can best accomplish medical school inspection in the various towns. He is kept constantly busy and is doing the best and most systematic work I know of in this country. He allows each town to select one of three methods of doing the work. They are as follows:

1. Organization with a medical officer and nurse, or nurses.

2. Organization with school nurse only.

3. Organization by the employment of a simple non-medical health survey, on the part of the teacher only, such as I have just briefly described.

I sincerely wish that all other states would follow the example of Minnesota.

Professor Heck of the University of Virginia is doing field work similar to Dr. Hoag's.

SCHOOLS FOR DEFECTIVES

The question of defectives and schools for defectives is one of the most interesting phases of the subject under discussion. About one and one-half per cent. of the school population is defective mentally. Many children appear to be mentally defective, who become normal in appearance when certain physical defects, such as adenoids, deafness, poor eyes, etc., are relieved; but about one and one-half per cent. of the school population remain mentally defective. What are we to do with them?

There are in all schools four classes of pupils, viz:

1. Those who keep up with their grades.

2. Those who do not keep up with their grades, but who eventually do, after certain physical diseases and defects are corrected.

3. Those who do not keep up with their grades on account of actual stupidity, laziness, viciousness, etc.

4. Those who do not keep up with their grades on account of mental defectiveness.

Children who do not keep up with their grades are called "repeaters." They stay in one grade or room term after term and hardly advance any in their studies. There are about 3,000,000 such children in the United States, and it costs about $100,000,000 to educate, or try to educate them. A very large majority of these 3,000,000 repeating children can be kept from repeating by relieving them of their physical diseases or defects. By taking advantage of this great economical and humanitarian measure, the repeaters would be practically reduced to those who do not progress, owing to real stupidity, laziness, etc., and to those who are actually defective mentally. Concerning the first, we shall have to get along as best we

may, but concerning the mentally defective, I am sure they should be taken out of the general schools, and placed in schools especially prepared for their benefit. All repeating children are a detriment to everybody in the school room, and they should either be cured of repeating or else placed in separate schools. They frequently hold back an entire class, for the teacher either has to neglect the balance of the class for their benefit, or the progressive scholars are taught at the expense of the laggard. Mentally defective children should, therefore, attend small schools, where, under the influence of special teachers, environments and methods, they may be educated according to their mental qualifications. Epileptics may, if necessary, be taught in these same schools.

It is getting to be pretty well understood that badly crippled and deformed children should receive special instruction in separate schools provided by the boards of education. Children only slightly deformed may be educated in the ordinary schools, but there are many children extraordinarily deformed, such as those who are armless or legless, etc., etc., who need special education, both from humanitarian motives and to keep them from becoming charges on the commonwealth. They should be gratuitously transported both to and from school.

Blind and deaf children have access to public schools of special character. Many such children are educated in state institutions; and where their homes and parents are of a poor quality, such places are best for them. But where children have good homes and parents, they should be educated in their own cities, where they can receive the benefits of home surroundings.

Open air schools, especially for the benefit of sickly and tuberculous children, such as are in existence in Providence, Mont Clair, Chicago, New York, Philadelphia, etc., are doing a grand work, and are becoming more popular every year. There are over 200 of such schools in the United States at the present time. The school is usually a commodious tent, or it may be on the roof of a school building, or in rooms well equipped with many open windows. Children are frequently gratuitously transported to and from school, and are given free, or nearly free, hot and nourishing food from time to time. They are well wrapped up in warm clothing and are properly exercised at certain intervals, and are encouraged to take naps in the afternoon. These schools are doing an enormous amount of good. To reduce the subject of tuberculosis to the sordid level of figures and money, I will remind you that 7,000 children die annually in this country of tuberculosis. The average age of these children who die is 12½ years, and inasmuch as the average age of these children when they begin school is 6 years, these children have been receiving free education by the state for over six years before they die. It costs $30 a year for the public school education of a child. These children have, therefore, each cost the state for their education over $180. When we consider that 7,000 children die each year of this disease in this country, it means that the nation spends over $1,000,000 each year of useless money for their education, it is evidently cheaper by far to keep children well than it is to allow them to remain sick or defective.

VOCATIONAL EDUCATION

The question of vocational education in our public schools for children is one of great importance, and it is hoped that it will not be long before children all may be trained for some useful vocation in life in the public schools.

The subject of free, or almost free, lunches of a good and nourishing character is believed by many to be an economic measure, as children who are well nourished can make better school progress than those who are not.

Free, or almost free, glasses is considered in about the same light, as children who need glasses but cannot afford them are much handicapped in school. This need not be a great expense, as in Cleveland, where this work is being done quite thoroughly, they only give away a little over 300 pairs of glasses in a year, which, when purchased at practically wholesale rates, amounts to but very little.

Twelve of our states distribute free text-books, and in Massachusetts, immediately after this law was in execution, the school attendance increased 10 per cent. In Newark, N. J., they have recently established an "Infants' Consultation Station," which is located in one of the school buildings. It is open from 11 to 12 o'clock, and is in charge of a doctor and a nurse. Here parents bring their infants and are instructed how to bathe, dress, feed and care for their babies. Healthier babies will be produced by this process, who, when they arrive at school age, will be much better equipped to receive and profit by a public school education.

Some people imagine that while trachoma exists in India, Egypt, etc., there is little or none of it in this country. Unfortunately, however, trachoma exists in lesser or greater degrees all over the country. Dr. John Green, Jr., found 223 cases in 21,930 school children in St. Louis.

Dr. J. A. Stucky's wonderful journeys into the mountains of Kentucky disclosed a most pitiable trachomatous condition. Trachoma is, of course, contagious, and may be communicated by handkerchiefs, towels, wash-rags, etc., and is fostered and encouraged by bad air, filth, malnutrition, crowded rooms, etc. The necessity is, therefore, apparent for clean, hygienic and proper school houses, decent homes, sufficient and proper food, etc. London has established "trachoma schools," where only trachomatous children are taught, where their eyes are not over-strained, where they are suitably fed and where they receive proper medical attention.

Camping schools, where children are kept out doors all the time, and taught manliness, botany, woodcraft, boating, etc., and where a healthy moral tone is maintained, are very useful and are becoming more and more popular.

City summer schools are maintained now in most all large cities. In these schools the air is cooled and the children are much more comfortable than on the crowded streets, or in the hot and badly ventilated and cleaned tenement blocks and homes. In these schools the studies are easy, and consist chiefly in lessons on cleanliness, hygiene, morals, good citizenship, travel, light literature, etc.; the idea being chiefly to keep the children from the streets, bad association, bad health, dirt, etc., and to retain the beneficial influences and discipline of school life. Cleanliness, health laws and good hygiene should be among the most important things taught in our public schools, not only during the summer vacation schools, but all the year around. These should become a habit with the children. Cleanliness begets self-respect, and self-respect begets most of the good things in life. Clean habits inspire people not to expectorate under unwise conditions, to keep lavatories clean, to dislike dirty towels, clothes, bodies, etc. Not only should hygiene be taught in our public schools, but normal schools should teach this subject to those people who expect to become teachers, so that they may thoroughly understand its practical laws when they come into contact with public school children. Teachers themselves should be compelled to present suitable medical certificates of health before being allowed to follow the teaching profession, and a renewal of such certificates should be required from time to time, as occasion requires. Ailing individuals are not qualified to be teachers of our children.

MEDICAL INSPECTORS

In small towns, one medical inspector will be sufficient, but in large cities many inspectors will be required, who will be under the supervision of the chief inspector, to whom all reports shall be made. Each inspector should give certain definite hours each day to his district, but the chief inspector should give all his time to the work. Each child should be thoroughly examined once or twice each year, and from time to time as occasion requires. Diseased or defective children should be sent home and the parents urged to consult a physician of their own choosing. These notifications should be followed up by the inspector, teacher or nurse, and every effort made to see that diseased or defective children are placed in proper medical hands. I am firmly of the opinion that sex hygiene should be taught in our schools. Male physicians should teach the boys and female physicians the girls. This knowledge is usually acquired in an undesirable manner, and it is best that children should be taught the truth, gently, scientifically and tactfully after the manner described by Dr. Phillip Zenner of Cincinnati.

I am convinced that great care should be taken that children are not over-crowded with school work at the age of puberty.

I also believe that the subject of medical school inspection should be thoroughly taught in our medical schools.

The medical inspector's chief assistant should be the school nurse. She has only been in existence a few years, but has amply proven her indispensibility. Her salary is always entirely inadequate. Everybody loves and honors her, and I have never heard a complaint of her work. In Boston, in one year, the school nurses visited about 23,000 homes of school children. They took 2,500 children to dentists, 9,000 to hospitals and 7,500 to family physicians. They made 36,000 surgical dressings, looked after 3,400 cases of defective vision and 350 cases of deafness. Each nurse cares for a certain district and its children, parents and homes. She assists the inspector each day in his work to whom she reports all suspicious cases. She cares for emergency cases and treats many cases of itch, eczema, lice, etc. She takes children to dispensaries, doctors and hospitals. She cares for them at home under the doctor's orders and makes it possible for the doctor to get good results. Medical inspection without school nurses would lose much of its usefulness. In Philadelphia, in 1910, it was found that without school nurses, 80 per cent. of diseased and defective children were uncared for, whereas with school nurses only 20 per cent. were uncared for. The school nurse also greatly benefits the home life of her district. She teaches

them decency, sobriety, cleanliness, cooking, bathing, hygiene, infant care and feeding, plumbing and drainage, etc. She is an angel of mercy in the household and renders the world better for her presence, and those communities who have once experienced the benefits of her ministrations are never willing to give her up. In many small communities, in conjunction with her other work, she takes the place of the medical inspector and does it well. She inspects the children systematically from time to time and observes them daily. She recommends medical care whenever it seems advisable, but does not treat cases herself, and must never recommend any doctor in particular; this must always be left to the family.

There is a difference of opinion as to whether medical school inspection should be accomplished under the authority of the Board of Health or the Board of Education. Such diverging views unfortunately frequently result in nothing being done at all. For instance, in Chicago, I have been endeavoring for years to secure an annual and systematic examination of the scholars' eyes, ears, noses and throats, but this beneficient movement has been prevented because the Superintendent of Schools and the Commissioner of Health could not get together as to whose shoulders the burden should fall on. The former feels that the Board of Health should pay the bills and do the work, and declares it would be unjust to ask the teachers to make the examinations, ignoring the fact which is attested by thousands of doctors, teachers, etc., who are familiar with the work, that this little bit of time and trouble subsequently repays them many times over by revolutionizing the characters and teachability of many of their pupils. I have too much respect for the intelligence of our Superintendent of Schools to believe that this is the real reason for not giving the order that these examinations shall be made by the teachers. The Commissioner of Health, on the other hand, claims that tests of this kind should be made under the auspices of the Board of Education, and that his department has not the money to have either the medical inspectors or school nurses make the tests. And thus between this conflict of opinion, the poor children in one of the greatest cities in the world refuses to dispense justice to its school children. It is really too bad, the teachers could easily and quickly make the tests if properly instructed; the expense would be almost nothing and the benefit to the children would be almost incalculable. It is quite well recognized by our leading authorities that boards of health should care for all diseases of school children that menace the public health, such as measles, diphtheria and other contagious diseases, while those defects of the children, such as eye, ear, nose and throat defects should be looked after by the Board of Education.

CONCLUSIONS

And now, as I bring this paper to a close, with much to be said that time forbids, I wish to say that one great reason for lack of progress along the lines indicated in my address, is politics — selfish, narrow-minded politics. Starting with bad appointments to health and educational bodies and ending in an entire misconception of duties, the building up of political machines and the yielding to graft, petty and otherwise, the unfortunate children of our country are continually suffering from conditions that seem incurable. I know of boards of education in which can be found saloon-keepers, gamblers, quack doctors, ignoramuses, corrupt politicians, etc. How much of progress can be expected of a board in whose ranks can be found men of this description? They are placed there for political reasons only; to pay a political debt, perhaps, or to cater to some political influence. How much uplift and advancement can be expected of boards influenced by such members? Such men do not believe in high ideals, they believe in graft and politics they call high ideals, "fads," and while saturated themselves with cupidity and avarice, believe that all men are built on similar lines and are as incapable of pure motives and benevolent inspirations as they are themselves. Such progress as I advocate is, therefore, hard to make, because those having such movements in charge are compelled too frequently to plead their cause before an unsympathetic tribunal; incapable or unwilling to believe that there are men and women in this world willing and eager to work for the good of the cause and without hope of reward, save in the consciousness of having performed their duty in that sphere of life in which it has pleased God to call them. Do not forget that if no higher motive inspires those having such matters in charge, it is financially cheaper to educate children properly in suitable buildings and to produce and maintain a high health standard than it is to educate them under reversed conditions, and to pay the money out supporting criminal courts, reformatories, jails, hospitals, institutions for the deaf, blind, dumb, crippled mental defectives, paupers, etc., even if we have no ambition to produce a strong race, as one generation succeeds the other. It must not be forgotten that a strong virile intellectual people is one of the greatest assets a nation can possess, not only in times of war, but also in times of

peace, and each individual community should be willing to do its individual share in the general uplifting and improving and strengthening of the Fatherland as a whole.

My message, as I close, to the state of Tennessee and every other state is, to get busy and take good care of its children. Build up a strong state by building up strong children. Start systematic state medical school inspection with plenty of good school nurses. It is the best investment you can make. Do it—and do it now!

7 West Madison Street.

SKIN-GRAFTING *

WALTER R. PARKER, M.D.
DETROIT

Definition.—By skin-grafting is meant the transplantation of either the whole thickness, or a portion of the superficial layers of the skin to a recently exposed or granulating surface in order to hasten its healing process and to prevent, as far as possible, future cicatricial contraction.

Fig. 1. Reproduction of photograph of case of cicitricial contraction of right cheek with turning out of lower lid.

Grafts may be divided in general into thin grafts, where only a portion of the thickness of the skin is utilized (Reverdin and Thiersch) and thick grafts, where the whole thickness of the skin is used (usually spoken of as Wolffe grafts).

Thick grafts may or may not be pedunculated. The pedunculated grafts may be from the immediate neighborhood, swung into place without disturbing the peduncle, or transplanted from distant parts, leaving the peduncle attached until the flap becomes viable, when it is cut from its base.

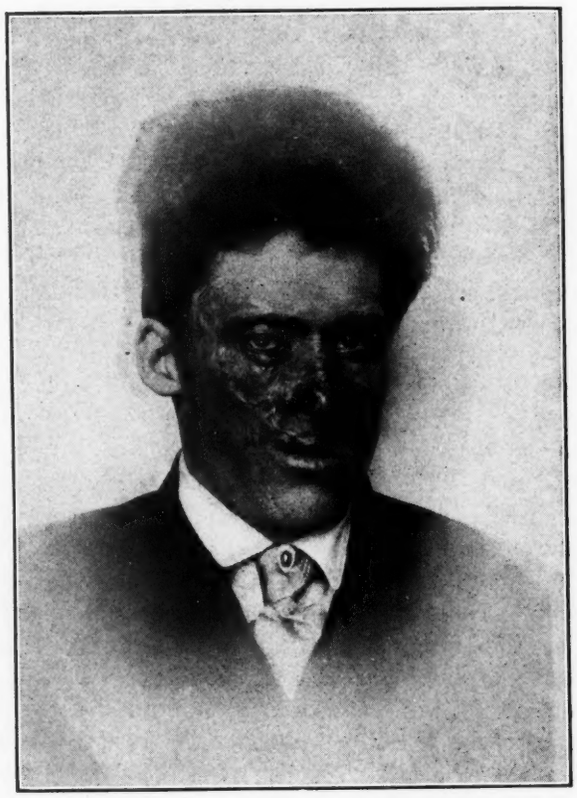

Fig. 2.—Same as Fig. 1, showing result obtained by use of Thiersch graft taken from arm.

Thin grafts may be small or large, varying in size from a millimeter in diameter to several centimeters square.

Grafts may be obtained from the same person (autodermic); from another individual of the same species (isodermic); or from a lower species (zoodermic). The majority of grafts are taken from the same individual, although they may be taken from amputated limbs and cadavers within a few hours after death due to accident.

The Thiersch method is the method of choice, on account of its simplicity, but in such exposed localities as the elbow, palm of the hand, and the knee, where there is considerable pressure and friction, whole-thickness flaps are better. It is advisable to use large flaps, as the healing is as good as with small ones and there are fewer scars and therefore less liklihood to future contraction.

Wolffe grafts may be taken from almost any situation where there is sufficient laxity of tissue to admit of suturing of the edges of the fresh

* Read before Genessee Co. Medical Society, April 19, 1913.

wound, the selection of location being determined by the nature of the graft desired. Sessile flaps have been successfully placed on healthy tendons, fascia, muscle, spongy bone and periosteum. According to Krouse, the ideal results to be obtained, namely, elasticity, softness, movability and normal color, can be obtained in about one-

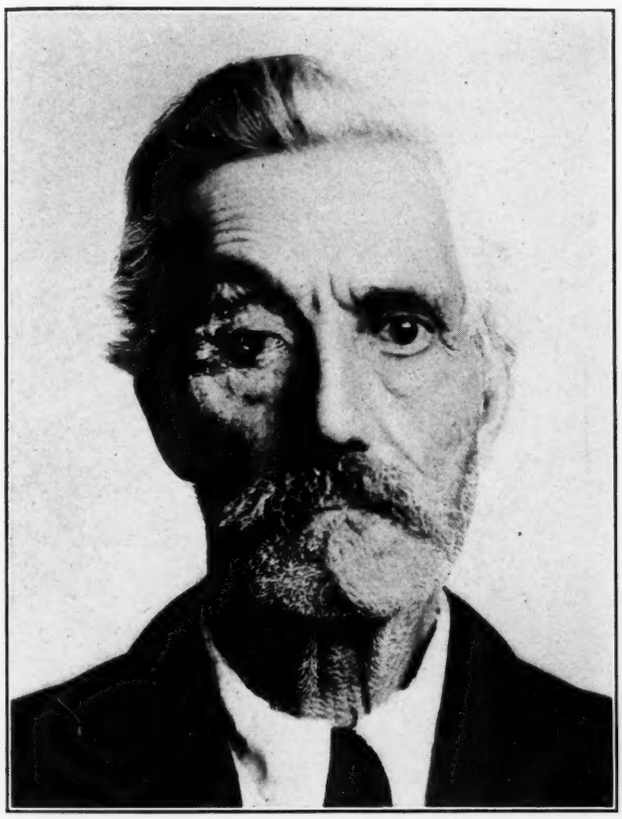

Fig. 3.—Reproduction of photograph of case of epithelioma of outer one-third of upper and lower lid.

third of the full takes. In whole-skin grafts a brown pigmentation may appear which, according to Krouse, originates from the broken-down hemoglobin of the blood which remains in the flap. This can be guarded against by squeezing the flap gently between pieces of gauze before applying. This discoloration is unimportant in the covered portions of the body but is much more serious on the face for cosmetic reasons. Full-thickness flaps sometimes shrivel, due probably to the puckering of the scar tissue in the depth of the wound. While these changes in no way impair the efficiency of the flap, nevertheless they would prevent us, except in cases of necessity, from using sessile flaps on the face, pedunclated flaps and Thiersch flaps being best for this region. Before the technic of full-thickness sessile flaps was perfected and proved so successful, better results were obtained by living, pedunculated flaps with subsequent amputation of the pedicle. The ordinary transplantation from distant parts can be used in comparatively few cases, the forced position being very trying to the patient and in addition a considerable defect is left.

In cutting grafts it must be remembered that elastic shrinkage takes place at once and that cicatrical shrinkage takes place later. There seems to be no way of anticipating or preventing the secondary contraction which sometimes follows an apparently successful Thiersch grafting. The general health of the patient is as a rule important to successful transplantation, grafts not taking as well on syphilitic patients, and care must be taken in isodermic grafting not to transmit disease to a healthy person. Cases of smallpox, syphilis and tuberculosis have been transmitted in this manner.

The grafts may be cut from any part of the body where the skin is thin and free from hair, the inside of the arm or thigh being the

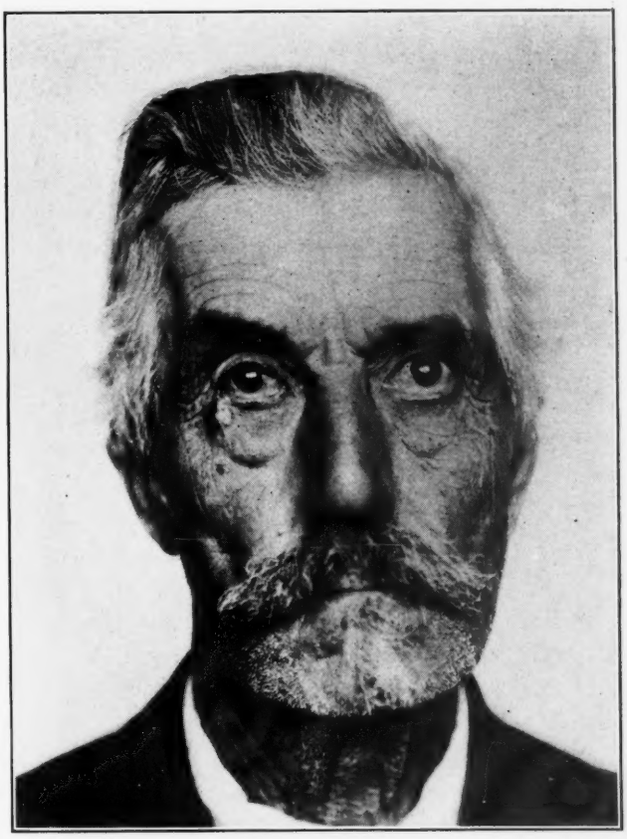

Fig. 4.—Same as Figure 3, showing result obtained by use of pedunculated graft.

places usually selected. The thin grafts are cut with a razor or microtome knife the size and shape of the graft being governed by the size of the surface to be covered. At Johns Hopkins very large thin grafts are cut from the thigh by the use of a Catlin knife and two sterile boards about 8 inches long, placed close together at right

angles to the length of the limb, the first being held by the assistant and the other by the left hand of the operator. The knife is then engaged in the skin between these boards and held almost flat against the limb and by a rapid sawing motion the graft is cut, the knife closely following the board in the hand of the operator, which is drawn slowly along in front of it.

After cutting the graft it is picked up, the raw surface exposed, on a piece of protective taken from the salt solution. The whole is then placed on a board by means of a smooth instrument and the graft is spread evenly. It is then covered with gauze, wet in salt solution until the area to be grafted is ready.

Being sure that all bleeding has ceased the protective on which the graft is spread is placed

Fig. 5.—Reproduction of photograph of case of obliteration of lower culdesac preventing the wearing of an artificial eye.

over the defect, so that the graft is next to the wound, then gradually the protective is lifted up and the graft is separated and left in place. It is pressed down evenly on the wound with pieces of gauze in order to get rid of air bubbles, and to make it adhere as closely as possible. If more than one graft is needed they are placed so that they overlap a little the edges of the wound and the adjacent graft.

If the graft is to be applied to a clean flesh wound it is important to see that all hemorrhage has ceased and that the wound is as dry as possible. If a granulating wound is to be grafted it is only necessary that the granulations be in

Fig. 6.—Same as Figure 5, showing result obtained by use of Wolffe graft after the method of Weeks.

a perfectly healthy condition before the graft is attempted. A Thiersch graft will take just as well on a healthy granulating surface as on a flesh wound.

There is still some difference of opinion as to the relative merits of the wet or dry method of dressing grafts, but all agree that success depends on absolute asepsis.

Most surgeons use perforated or overlaping strips of rubber protective next to the graft and over this gauze saturated with sterile normal salt solution. Dry gauze is sometimes placed directly over the overlapping protective strips or directly over the graft. Some prefer alternating wet and dry dressings, while others use dry powders and ointments.

It is my practice to use the open-air treatment. After the graft is placed in position aristol

is dusted over the edges and no dressings applied other than for protection. Rolls of gauze are fixed around the grafted area in such a manner as to prevent the gauze covering coming in contact with the graft itself. My results since using the open-air treatment are much better than those obtained by the use of protective and dressings.

The grafts are, as a rule, cut while the patient is under a general anesthetic, although many operations have been made without general anesthesia. I have done a few but I believe it is more advantageous and is an operation of enough severity to warrant the use of a general anesthetic.

Freezing or cocainizing the external cutaneous nerves of the thigh have been used when grafts were cut with little or no discomfort to the patient, also the use of ether spray over the field of the cut has been recommended.

For after-treatment, massage of the grafted area and surrounding skin is very advantageous, as it softens the graft, renders it more movable and causes it to assume more rapidly the appearance of the neighboring skin.

One of the most striking things about skin-grafting is the persistence of the vitality of the grafts. The skin of amputated limbs has been successfully transplanted from thirty-six to ninety-six hours after amputation. Davis has successfully transplanted onto healthy undisturbed granulations pieces of whole-thickness skin, taken from a leg eighteen hours after amputation, at various intervals up to thirty days. The skin was kept in an ordinary ice-chest in a sterile jar, plugged with cotton containing a moist normal salt gauze sponge.

All experiments go to prove that nothing is lost in vitality in twenty-four hours, if the graft be kept cool. In cases where there is much bleeding the graft can be preserved and applied within twenty-four hours. Asepsis and a properly prepared field and not "speed" are the most important factors in successful skin-grafting.

The illustrations show the results obtained by the use of grafts of different forms.

32 Adams Avenue West.

OCULAR MANIFESTATIONS OF DISEASE OF THE PITUITARY BODY *

GEORGE M. WALDECK, M.D.
DETROIT

The pituitary body, or hypophysis cerebri, is a small reddish-brown organ weighing 5 to 10 grams and occupying the *sella turcica* of the sphenoid bone, separated from the brain by an extension of the dura known as the *diaphragma sellae*. It is composed of an anterior and posterior lobe which differ in size, structure and origin.

The larger anterior lobe develops as an ectodermic process from the wall of the embryonic buccal cavity. In structure it resembles the thyroid gland discharging a stainable colloidal substance directly into the blood. The secretion of the anterior lobe is vitally essential, total removal causing death.

The posterior lobe, developed as a downgrowth, from the third ventricle, is composed of two parts, the infundibular body, the stalk of which passes through the *diaphragma sellae* to the floor of the third ventricle and a very thin epithelial investment, the *pars intermedia*. The secretion of the posterior lobe, part of which bears a close relation to adrenalin, is discharged directly into the cerebrospinal fluid. While not as necessary to life as that of the anterior lobe, it bears a direct relation to carbohydrate metabolism.

SYMPTOMS

Symptoms of pituitary disease may be grouped into two classes:

1. Depending on altered secretion of the gland.
2. Due to presence of tumor causing mechanical pressure on surrounding parts.

While the ocular symptoms are almost entirely due to the anatomical relation of the body to the chiasm, an understanding of the changes caused by altered secretory functions is essential.

Cushing has given an admirable explanation of the variated symptomatology. In thyroid disease we have hyperthyroidism or overactivity of the gland of which Graves disease is a clinical prototype; and a condition of hypothyroidism, grandular loss or inactivity, with Gull's myxodema as its typical adult, and cretinism as its typical childhood manifestation. Similarly in pituitary disease we may have a condition in which the clinical manifestations of past or existing hyperpituitarism or of hypopituitarism may predominate. Hyperpituitarism is evidenced by (a) gigantism, when the process antedates ossification of the epiphyses (Typus Lanois); (b) acromegaly when of later occurrence (Typus Marie).

Hypopituitarism is manifested by adiposity, with persistence of (a) skeletal and sexual infantilism if in childhood; (b) sexual infantilism of the reversive form, impotence or amenorrhea if it originates in the adult.

Often we may have transitional conditions in which it may be difficult to determine which pre-

* Read before the Detroit Ophthalmic and Otologic Club, March 5, 1913.

dominates and to these cases the term dyspituitarism is applied.

This classification does not take into consideration the dualistic character of the gland, for there may be either an over- or underactivity of both the anterior and posterior lobe, or of either one alone. Certain cases present a combination of skeletal overgrowth, due to anterior lobe hyperplasia, and adiposo-genital dystrophy due to a decrease of the posterior lobe secretion. The anterior lobe seems to be closely allied with the other ductless glands and presides more intimately over skeletal growth often combined with cutaneous changes and hypertrichosis, while the posterior lobe is more closely concerned with tissue metabolism, particularly with carbohydrate assimilation and with activity of the renal and vascular systems.

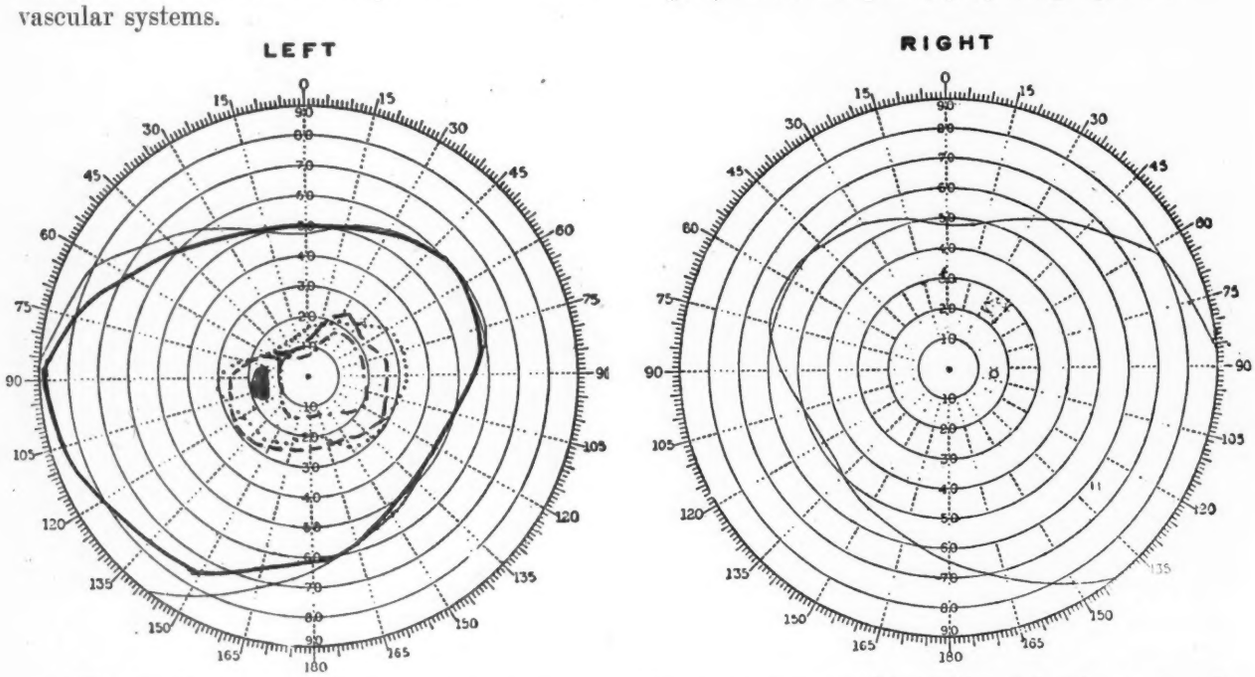

Fig. 1.—Field of vision Case 1, before operation, showing interchange of fields for blue and red. O. S., O.D. No light perception.
———— Form Field. —.—.—.—. Field for green. ..... Field for red. — — — Field for Blue.

All cases of original hyperpituitarism associated with tumor will eventually develop hypopituitarism, and in many cases in which existing hypopituitarism is the striking feature, traces at least of an early tendency to hyperpituitarism may be detected.

Cushing has found that secretory deficiency of the posterior lobe was evidenced by high sugar tolerance with associated tendency to adiposity, subnormal temperature, low arterial tension, somnolence, dry skin, polydipsia and polyuria, loss of hair, and psychic, often epileptiform disturbances, a sort of pituitary myxodema. On the other hand, overactivity of the posterior lobe occasions symptoms the reverse of the above, tissue waste, with loss of flesh. a relative intolerance for sugar often glycosuria, moist skin, hypertrichosis and pigmentation.

The subjective symptoms of pituitary growth consist mainly of headache, usually bitemporal, often severe and persistent. Photophobia is frequently present, associated with deep orbital discomfort and sensitiveness of the eyes to pressure. Psychic disturbances may vary from amnesia to melancholia and epilepsy.

Perhaps the most valuable adjunct to diagnosis is the x-ray. The technic as devised by Dr. Preston Hickey of Detroit, is as follows: Two exposures are made for a stereoscopical examination, both through the side of the head, one slightly above the plane of the sella turcica, projecting somewhat downward and the other slightly below the plane, projecting upward.

PATHOLOGY

Three types of pathologically deformed and enlarged *sella turcicas* may be distinguished.

1. There may be thickening of the clinoid processes and dorsum, the bones here as elsewhere taking part in the overgrowth.

2. Distension of the sella with absorption of bone from pressure atrophy. In advanced cases may become an extreme hollowing out of the fossa, projecting far into the sphenoidal cells, the bony capsule so thin as to cast a hardly perceptible shadow.

3. A more or less complete absorption of the dorsum and a downward dislocation of the base so that the sellar landmarks, with the usual exception of the anterior clinoid processes are effaced. This change may be brought about by

malignant growth—capable of bursting the dural capsule and invading the cranial chamber.

Mechanical pressure on the optic tracts, chiasm or nerves accounts almost entirely for the visual disturbances. Most common is the primary optic atrophy usually more marked in one eye and associated with amblyopia. Rarely is there choking of the disk, and when present, supersedes rather than precedes the atrophy, coming on later when the growth reaches such a size as to cause general pressure symptoms.

The infrequency of choked disk is explained by Huesser, who described two causes: (1) while the tumor is moderate in size, it is positively separated from the rest of the brain by the strongly stretched dura and is not able to raise the intracranial pressure sufficiently to cause papilloedema; (2) it may, by its position, so compress the optic nerve sheaths that cerebrospinal fluids may not enter.

Reduction in vision is the most important and usually the symptom to which attention is first drawn. There may be loss of central acuity or alteration in the size and form of the field.

While bitemporal hemianopsia is the most common and most characteristic visual field phenomenon, homonymous defects are by no means uncommon. Unilateral blindness may occur without much change in the field of the opposite eye as in the first case presented. In all cases the color fields are first involved, the form fields later. DeSchweinitz recently showed the relative frequency of scotomas in pituitary disease. These may be central, paracentral or peripheral, irregular in form and subject to change.

Eventually the hemianopic character of the field is lost by the advance of the optic atrophy and gradual encroachment of the blind field on the seeing field. The macular area is often spared for a long time, but finally becomes implicated, the nasal field in turn progressively shrinks away from the center and blindness supervenes.

At times a positive Wernicke reaction sign may be obtained. Some exophthalmos is commonly seen probably due to local stasis of the Cavernous sinus. There may be disturbances of the third and sixth nerves with or without nystagmus.

CASE REPORTS

CASE 1.—Patient, a young woman of 34 years, was first seen Feb. 21, 1911. When 12 years of age she had a severe fall striking the back of her head. Her menses began at 15 years of age, and continued with fair regularity for two years, when they ceased permanently. She weighed 120 pounds until 18 or 19 years of age, when she increased to an average weight of 180.

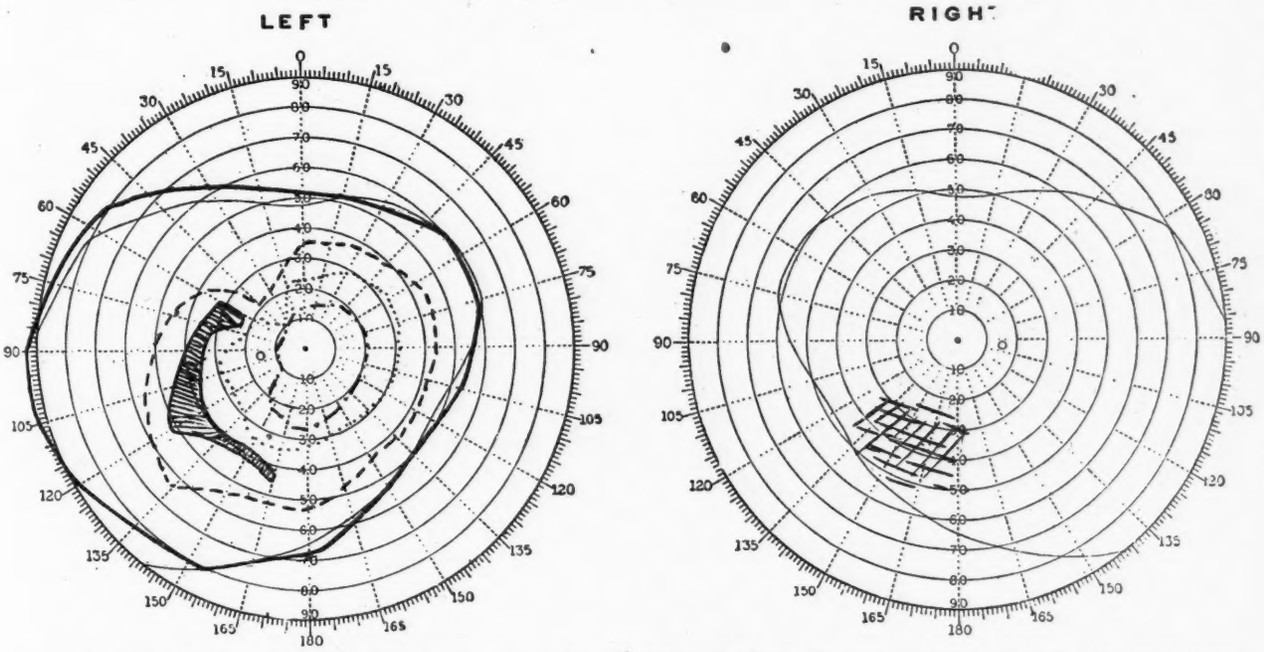

Fig. 2.—Field of vision of Case 1, two years after operation showing temporal scotoma for blue O.S., small area of light perception in nasal region of O.D.
———— Form Field. —.—.—.— Field for green. ..... Field for Red. — — — Field for Blue.

Vision in O. D. began to fail sixteen months ago, and in five months was completely lost. Has had frontal headaches and epileptiform attacks of dizziness, sensations of rising from the ground and marked trembling. No loss of consciousness. Has had as many as four in one day, increasing in frequency during the last year. No nausea or vomiting. Worries a great deal, is depressed and lacks in former ambition. Frequently has sudden momentary hemianopsia, the right half of objects disappearing while the left half appears double. Has increased the size of gloves and shoes one size within past year. Physical examination showed some adiposity with muddy, freckled complexion. Mucous membranes pale, infantile

pelvic organs, some maxillary prognathism, hands square and some terminal fullness of fingers.

Stereoscopic x-ray examination by Dr. Hickey showed a much enlarged sella turcica and a wearing away of the posterior clinoid processes, especially the right one. No general pressure symptoms, slight increase in carbohydrate tolerance.

Eye Examination. — O. D. pupil reacts to accommodation and to consensual light, but not to direct light, dilates evenly. Nerve head pearly white, slightly cupped, arteries contracted, vision nil. O. S. pupillary reaction normal, nerve slightly pale, vessels not contracted; vision w. c. 15/15. Field of vision of the left eye (Fig. 1) showed some temporal constriction for form, and slight interchange of the red and blue. Wassermann reaction negative.

enlargement of the hands and feet evidence a former hyperpituitarism and the amenorrhea, adiposity, dry skin and increased sugar tollerance a tendency toward glandular insufficiency.

CASE 2.—Patient, male, aged 46 years, gives a history of gaining 40 pounds during past year, has loss of intelligence of expression and poor memory. He shows suggestive maxillary prominence, course features and short, square hands, with thickening of the terminals. Also a sexual infantilism of the reversive type; sexual impotence for past two years. Wassermann reaction negative. X-ray shows an enlarged cella turcica and an absence of posterior clinoid process on right side.

Eye Examination.—Pupillary reflexes normal, except for loss of direct light, O. D. and con-

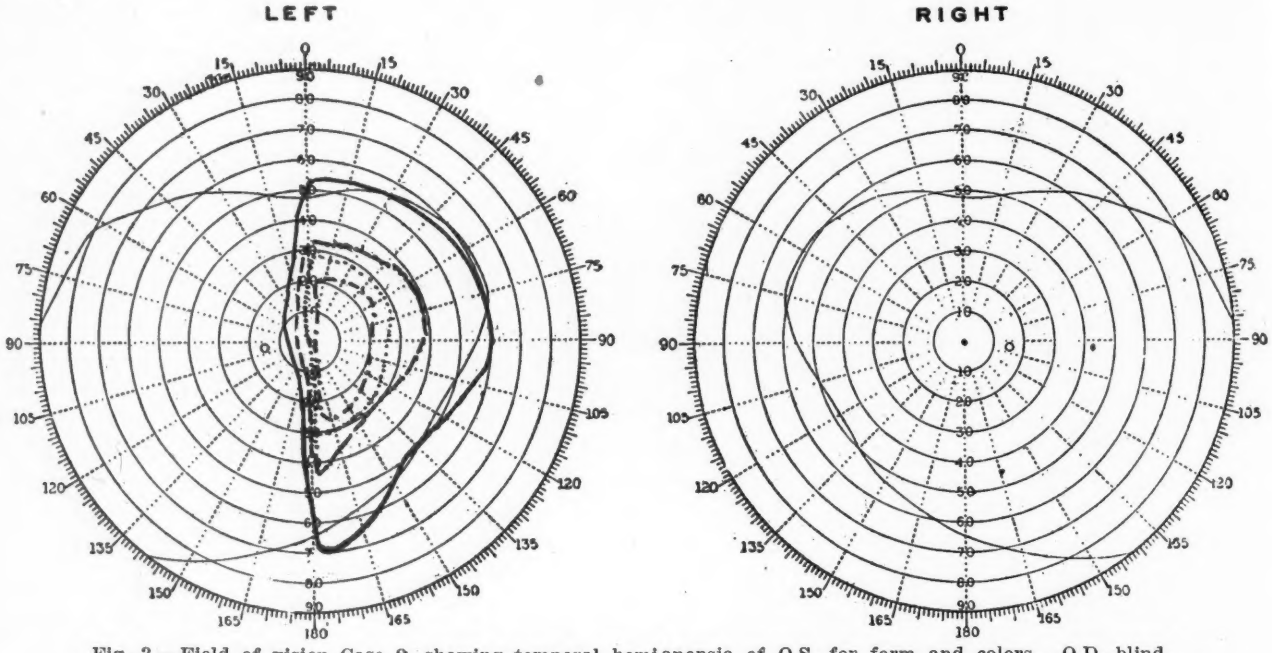

Fig. 3.—Field of vision Case 2, showing temporal hemianopsia of O.S. for form and colors. O.D. blind.
———— Form Field. —·—·—·— Field for green. ..... Field for Red. — — — Field for Blue.

Operated March 18, 1911, by Dr. Harvey Cushing of Baltimore, who performed a sellar decompression by the sublabial route with submucous resection of the vomer. The dural envelope was split over a large bulging gland, and a small portion removed. Histological examination showed a hyperplasia of the gland or so-called adenoma.

Examination March 5, 1913, two years later, showed but little change since before operation. The field of vision of the left eye (Fig. 2) was normal for form. A large temporal scotoma for blue only was found. A small area of light perception was present in the nasal field of the right eye. The vision with correction $s + 1.25 = c - 2.25 \times 5°$ v = 6/7.5 +. Except for periodical attacks, epileptiform in character, patient is much improved and able to do her work. Has taken pituitary extract regularly since operation.

The case belongs to the group with pronounced neighborhood but relative inconspicuous glandular symptoms. It shows a dyspituitarism, the sensual O. S. O. D. vision nil, media clear, nerve head pearly white and cupped. O. S. vision 6/60, media clear, head of nerve pale, deep central physiological cup, vessels normal in size, whole fundus granular. Visual fields O. D. nil. O. S. definite temporal hemianopsia for form and colors (Fig. 3).

This case belongs to the same group as the first case, a dyspituitarism with previous hyperpituitarism superseded by a hypopituitarism. The patient refused operation, but on pituitary extract has shown considerable improvement in general health during past five months, except for steady gain in weight.

Adenoma or simple hyperplasia of the gland is the most common tumor of the pituitary body. Sarcoma, carcinoma, teratoma, lipoma, cyst, tubercle and gumma have been found at postmortem examination.

Hypophysial tumors are on the whole slow-growing and benign, varying in size from a pea to a walnut. Sarcomata attaining the size of a hen's egg or larger have been reported.

The great variety of symptoms which may develop from disease of the pituitary body make the diagnosis often difficult. Unilateral optic atrophy especially if there is a tendency to temporal hemianopsia, associated with a history of early failure of sexual functions is strongly suggestive of a pituitary body lesion.

32 Adams Avenue West.

THE PSYCHIATRICAL ASPECTS OF A STERILIZATION LAW *

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The question of the sterilization of the so-called unfit has been coming into prominence for a number of years, gradually gaining attention until this spring when it took concrete form in a bill passed by our state legislature. Like all innovations, this movement has its ardent supporters who expect the correction of many evils opposed by those who are more conservative and wish to wait for further investigation. Fortunate is the person who can approach these subjects with an inquiring mind free from prejudice and open to conviction. This symposium is an indication, I take it, that this society wishes to view the question from all sides and if possible determine its true position among the many reforms advocated to-day.

STERILIZATION LAWS

A sterilization law was passed in Indiana in 1907, the first state to secure the adoption of such a measure. Washington, California and Connecticut followed in 1909, Nevada, Iowa and New Jersey in 1911, and New York in 1912. In general the purpose of the laws in these states is the prevention of procreation by inmates of public institutions for criminals, rapists, drunkards and drug habitues, insane, feeble-minded, imbeciles and epileptics. The advocates of such laws consider individuals belonging to these classes unfit for parentage, because of the possibility of the antisocial traits being transmitted to their offspring.

This paper will deal more especially with the insane. There is much dispute whether criminality, drug addiction, etc., are evidences of mental diseases, setting aside the question of heredity. It is a large subject, in itself, in regard to which criminologists are not yet agreed. Let us then consider the bearing such a law will have on the individual and society as it pertains to recognized mental diseases.

EFFECT ON THE INSANE

The effect of such an operation—and by this is meant vasecotomy, and salpingectony—on the individual's mental and physical makeup, can be dismissed by a few words of discussion. Authorities claim, and it seems reasonable, that the internal secretions of the testes and ovaries are preserved so there would be none of the deleterious effects which might follow castration. Medical men are agreed, I think, that mental and nervous diseases are not caused reflexly by disturbances of the reproductive organs, so the procedure would have no indirect effect, at least none with which we are acquainted, at the present time. Dr. Sharp, superintendent of the Indiana Reformatory, reports 500 cases of vasectomy and from his observations there are no harmful effects, but on the contrary he believes there is a lessening of fatigue and an increase of muscular energy. At this point it may be said that Dr. Sharp does not record any recoveries due to the operation, bearing in mind that his work was among the inmates of a reformatory.

There is a possibility of an effect on the subject's mind, a psychical phenomenon, not due to a lack of internal secretion or reflexly, but a result of the knowledge that they have been asexualized. This, in the opinion of the writer, would be a very important matter in some forms of insanity, and looking at the question from the standpoint of the patient's welfare, serious consideration would be required before advising the operation. This is especially true in women who have the maternal instinct strongly developed, as it would add another disturbing influence to a mind already upset by some sexual complex. The insane, in many cases, have the same hopes and fears and powers of reasoning as the sane, and they are not to be deceived in a matter of this kind. Such things soon become a topic of conversation among them, making greater the already difficult task of securing their cooperation in surgical procedures of unquestioned value. This objection could be cast aside if sterilization will prevent insanity and result in the betterment of the race.

EFFECT ON THE PUPLIC

Another phase of the problem is the effect it will have on the general public and the friends of the patients. In what way will the attitude

* Read before the Saginaw County Medical Society, May 27, 1913.

of the general public toward the present methods of treating the insane be changed when it becomes known that sterilization is frequently resorted to in hospitals for their care? There is a possibility that it will create a fear of such institutions in the minds of prospective patients and their friends. Patients with mental afflictions need to receive medical care early in the course of the disease in order to bring them under the influence of treatment before the condition has become firmly established. The superintendents of the hospitals in the state are constantly striving for this very thing and have tried to get legislation to make easier the commitment of voluntary patients. If the afflicted are confronted with the possibility of sterilization, the patient and friends are likely to delay seeking medical advice as long as possible. This may seem like an insignificant point; but if early commitments are desirable it may prove to be a serious matter in practice.

The legislation for a sterilization law as applied to psychiatry derives its force from the desire to diminish insanity by preventing procreation by individuals of unsound mind. This is inspired, not only by the desire to prevent insanity, but by the belief that insanity is increasing. The advocacy of such a means can only be based on the idea that it is an hereditary disease.

In regard to the first proposition it must be granted that methods to prevent are more efficacious than methods of cure. As with all other diseases it is best combated by ascertaining the cause and taking steps for its removal. If we have in sterilization such a prophylactic measure, everyone would welcome it. But why all this alarm about insanity? Is the increase so rapid that we must adopt any measure, if it holds out any hope whatever of success? Many authorities will state that there is such an increase, but have they offered conclusive proof? Statistics are derived largely from the hospitals for the insane. The population of these institutions may grow faster than the general population, but this does not of necessity mean more insanity. It may indicate that the state is taking better care of this unfortunate class in providing for them, and that the general public is more alive to the needs of institutional care. Tanzi compares the ratio of the insane in the hospitals to the population in Italy, with Germany, Belgium, Switzerland and England. In Italy the ratio is not more than 2 per 1,000, while in the other countries it is 3 per 1,000—quoting his words, "Must we conclude from this that the most cultured nations of Europe are thrice more exposed to the scourge of insanity than Italy? Certainly not. In the first place, a greater number of asylum inmates does not mean a greater number of lunatics; to a certain extent at least it is only the result of a more highly advanced hospitalization of asylums—that is to say a rational consequence of a high degree of civilization." Dr. Christian has shown that there has been no great increase in the eastern district of Michigan since 1893. The number of new cases admitted to the Pontiac State Hospital in proportion to the population of the district was computed, showing a slight increase in some years; but, whereas in 1893 it was 3.2 in every 10,000 of population, in 1912 it was 3.1.

THE IMPORTANCE OF HEREDITY

The real problem is to determine the importance of heredity as a factor in the production of mental diseases. With all due respect to the investigators, who believe it an established fact, it is permissible to ask if there is conclusive proof that it is the all important factor. The thorough investigation and proper recording of family histories is just beginning to receive attention. There are so many lines of heredity that it takes careful search to uncover them. Hospitals for the insane are endeavoring to compile authentic records of each case; but it is a study of generations, and this of course requires years of work.

When man is studied biologically it can be said that his development and life are dependent on certain things inherent in the germ plasma and influences operating after the union of the sexual elements. Physical man develops along certain uniform lines, such things as familial and racial characteristics being, of course, hereditary. The germ cells unite and divide and become grouped so as to form the various structural divisions of the body, because of certain tendencies peculiar to the germ plasma of the species. It has been proven that certain physical markings are transmitted according to well-defined laws. Dr. Davenport, in his book on "Heredity in Relation to Eugenics," states that "it has been established that eye color, skin color, hair color, hemophilia, Huntington's Chorea, insanity, feeblemindedness, and epilepsy are transmissible; but other characteristics are not so clearly so, as stature, body weight, musical ability, temperament and handwriting." During the development of the embryo certain intra-uterine influences may interfere to bring about a departure from the normal course of events. These would not be ascribed to heredity. Many imbeciles and idiots are the result of these intra-uterine con-

ditions. Referring to Dr. Davenport again, it is found that 30 per cent. of them "belonging to the mongolian type are caused in this way and in whose family no evidence of mental defect can be traced."

When the mental part of man is considered it must be granted that other laws are operative than those of embryology. The eye color, shape of the head, color of the hair, form of the nose, etc., are tangible things, while the mental qualities, as temperament, conscience, memory, judgment, and the other specialized functions of the mind are more elusive to the investigator. They are not present at birth, but are a product of growth, modified by influence in the environment, capable of change by individual effort, and can be spoken of as acquired qualities. The child during the period of development, to finally measure up to the social standard, must acquire all the attributes which civilization has taken centuries to produce. Is it any wonder that sometimes one in a few hundred fail? During the formative period the mind is subjected to many influences. Two individuals living the same kind of a life are not going to have identical experiences, or the same reactions to experiences in common. Each event then makes the one person just that much different than the other, determining individuality. The mind is constantly receiving impressions which combine with previous ones, making associations linked with those already formed. Is it not reasonable to suppose that a peculiar combination of them, depending on individual variations, may result in a dwarfing of some trait or the accentuation of another, so that in after years the individual under some stress of circumstances manifests symptoms which we call insanity?

Let us consider for a moment one of the mental attributes—conscience, the ability to distinguish between right and wrong. It is a state of mind, a feeling accompanying every thought and action, which is uncomfortable or not as conscience dictates. How does such a mechanism develop, and how is it modified? One member of a family has a very sensative conscience, while the others less, even though their social status be the same. The experiences of the one have produced different effects, depending on individual variation. Conscience is a developmental phenomenon. The same may be said of the other mental faculties. Habits of thought, which increase or diminish the powers of concentration and reasoning, are more or less under the control of the will and are matters of training. In the present state of abnormal psychology it is difficult to say what influence such habits of thought have on the production of mental disturbances, but it is reasonable to suppose that they may be an important factor. Granting then the difference between physical and mental traits and the complicated mechanism of mental development, it seems that the cause of insanity is to be sought in some thing besides ancestral defects. The presence of these defects in a percentage of cases does not rule out the other influences mentioned, and hence it is not certain that the elimination of these strains will prevent insanity.

INSANITY FROM OTHER PHYSICAL AGENTS

Some forms of insanity are caused by physical agents. Alcoholic insanity, mental conditions due to toxic states, and the diseases caused by acquired syphilis fall into this class, and probably would not be influenced by a sterilization law. There are other forms for which a cause has not been determined, and it is in regard to these that the question of heredity enters. True it is that a search often reveals psychopathic conditions in the direct or collateral ancestry of many patients more prevalent in some forms of insanity than in others.

WHAT THE STERILIZATION LAW WILL ACCOMPLISH

It can be conceded for the sake of argument that mental diseases are caused by defective strains in the ancestry, in order to see what could be accomplished by a sterilization law as it would work out in practice. The laws as adopted by the different states thus far contemplate the prevention of procreation by subjects who are confined in charitable institutions. The authority is not given to go out and sterilize the parents who are producing these so-called defectives. Even if such a radical step could be taken, it might not accomplish much, as the parents are already past the child-bearing period when one of the offspring reaches an institution. They may have healthy children, and if the hereditary taint is carried to the next generation, sterilization would have to be carried out very extensively to be effective. If the defective strain is carried in the germ plasma it is not going to be eliminated by sterilizing the individual in whom it sometimes crops out.

What can be done for the prevention of insanity by the sterilization of the patient in the institution? It would not be necessary, except in cases about to be discharged. The law, as drafted in Indiana, puts the responsibility on a committee of experts whose duty it shall be to determine whether or not procreation is advisable; "but the operation shall not be performed

except in cases that have been pronounced unimprovable." In New Jersey the commission must decide "that procreation is inadvisable, and that there is no probability of such improvement as to render procreation by such individuals advisable." The improvable clause eliminates a large number of the discharged patients, as many of them have recovered, and in New Jersey and Michigan, where the matter of the advisability of procreation is left to the discretion of experts, their findings are subject to a review by a court of justice. The selected cases must be capable of proof that procreation is inadvisable.

Many patients already have children in good health, so sterilizing the patient will not blot out these strains. Another large class of the discharged patients can be ruled out, of those who would be suitable for sterilization, because they are already past the child-bearing period. From this discussion it can be seen that the field for sterilization in hospitals for the insane is very limited, and there is much doubt in the writer's mind for the necessity for such a measure.

The experience of other states does not help much. An analysis of sterilization laws by Dr. Hatch, in the Report of the Lunacy Commission of California, shows that the object of the law, in those states which have adopted it, is for eugenic purposes only, except California. This state makes use of it for the "physical, mental or moral benefit of the subject." The report further says that in California, where 268 patients have been operated on, that "it does many patients much good, while in others there has been little effect on the mental condition, but generally some improvement in the general health." In those states where it is adopted for eugenic purposes not many statistics are as yet available. In fact, Dr. Hart, Director of the Department of Child-Helping of the Russell Sage Foundation, records in a recent article, that in Indiana in 1907-08, 119 operations were performed; 39 in 1908-09, while during the last two years there were none. It was not made use of in Connecticut and Washington, although in force three years; nor in New Jersey and Iowa, where it has been in force two years. New York has had the law only one year, and there is no report from Nevada. All of which indicates that there is not much enthusiasm where authority has been granted to carry on sterilization.

The feeble-minded, imbeciles and epileptic present rather a different phase of the subject, and more positive statements are made in regard to it. As stated above, about 30 per cent. of the imbeciles are the results of intra-uterine conditions, not determined by heredity. There are others which can be ascribed to inherited defects. As shown by Dr. Davenport, when both parents are feeble-minded or epileptic, all their offspring are so likewise; but the same authority also states that with proper mating the defective taint can be neutralized and eventually lost. To reach and prevent this condition it would be necessary to sterilize individuals early in their reproductive period, and not limit the legislation to inmates of institutions. The general public would not tolerate such a comprehensive measure. Segregation of this class is being advocated by many reformers, as it answers the purpose of preventing procreation, and separates the defectives from society, in which they are always a disturbing element.

CONCLUSIONS

An attempt has been made to discuss the need for a sterilization law, and its application to the insane in public institutions. It is believed that the following conclusions are warranted:

1. Sterilization is not a therapeutic measure of proven value.
2. The extensive use of the law in institutions would prevent early commitments.
3. The question of heredity in mental diseases has not been settled, so the law is premature.
4. The law would not reach the great source of the insane if heredity is the great factor, and would only apply to a few cases in the hospitals, who may have children after their discharge.

Finally, what is needed is an investigation of the causes of insanity, and further study of family histories recording the healthy as well as the diseased offspring. A study of the early life of individuals becoming insane to find conditions having a bearing on the production of the mental disturbance. To do this, insanity must be looked on as a pathological alteration of one of the functions of the brain, and not a stigma of degeneracy, and studied the same as a disease of any organ of the body. These things require state aid, time for thoroughness and an earnest effort on the part of the medical profession.

ANGINA PECTORIS; CASE REPORT WITH COMMENTS *

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Mrs. G., age 63, began complaining, late in August, 1912, of pain in the region of the heart and down the left arm on walking even a short distance. The pain was sometimes accompanied

* Reported before the Kent County Medical Society, May 28, 1913.

by difficulty in breathing, although not always She could not walk a short block without being obliged to stop once or twice. She came to see me about October 1, when the diagnosis of angina pectoris was easily made. Rest was ordered, with mild medication—nitroglycerin and iodid of potassium. Her blood pressure was 200, but a careful examination failed to show any signs of nephritis.

I left the city October 10, and the patient was left in the care of Dr. Corbus, who confirmed the findings as to blood-pressure and nephritis, but also found that she could not take iodin in any form. She improved, however, so that about November 20, and for a short period after that, she could walk quite well, with but little pain.

About December 1 the pains returned and became very troublesome. They would begin suddenly at the precordium, extending from there to the shoulder and down the left arm; never affecting the right side. A sensation of numbness was often present. There was never any pain when walking about the house until just before Christmas, when, on going upstairs, she had a seizure—quite severe. This was followed by others equally severe, but not of long duration. December 24, about one hour after dinner, she was suddenly seized with the most severe pain she had thus far experienced. It seemed (as the patient expressed it) to pass through the heart to the shoulder and down the arm. She was helped to bed, sent for me and was given a hypodermic of ¼ grain of morphin. I ordered strict rest in bed and a more careful adherence to the vegetable diet that I had ordered some time before. Before this, the patient had taken, at the beginning of the attacks, a pearl of nitrite of amyl and 1/50 of nitroglycerin by mouth, and this had seemed to control the sudden attacks.

On Jan. 1, 1913, she was seen by Dr. Babcock of Chicago, who gave her a very thorough examination and confirmed the diagnosis. He also continued the treatment. During the month of January she had a number of mild attacks, which were easily controlled. The last week of January she had a very severe attack of pain in the region of the right kidney, but during that week she was entirely free from pain in the heart. The first week of February, in fact, up to February 11, she felt quite well; sat up in a chair every day, sometimes as long as three hours at a time.

February 11, at about 8:30 a. m., after a breakfast a little larger than usual, while sitting in a chair, she complained of feeling very strange and was convinced that she was dying. The pulse became very slow, with some irregularity. There would be two slow beats and then a long (?) interval without any pulsation, when the same performance would be repeated—two slow beats and an interval of absence of pulsation. She was pale, faint and suffocated. This condition lasted about one-half hour and then normal pulsation was gradually restored. There was no pain of any description.

From February 11 to 14 the pulse was fairly good, averaging about seventy beats to the minute, though it would occasionally run up to over 100, become irregular and sometimes weak. During this time there were several attacks of pain moderately severe in character, with a sense of suffocation, etc. From February 16 to 19 she had no pain, but complained of a very uncomfortable feeling and throbbing in the blood-vessels of the neck. The quality of the pulse was good and there was no sense of suffocation.

February 21, at about 6:20 p. m., pain started in the left arm; the pulse became weak and irregular, running from 66 to 115. From February 22 to March 14 there was very little pain, no sense of suffocation, appetite was good and patient walked about the rooms twice a day. March 14 to 23 the patient had attacks of pain, sometimes quite severe. March 25 she suffered a very severe attack at about 5 a. m., so severe that ⅜ gr. of morphia was given hypodermatically and repeated at 10 a. m., but pain was not entirely controlled and lasted with varying severity for two days. Patient's condition then began to improve in all respects so that from April 11 until the present time there has been practically no pain.

At present, June 4, 1913, the blood-pressure, by Janeway's instrument, is 155. The appetite is quite good, the pulse remains of good quality and is not nearly so sensitive to disturbing influences. The patient sits up twice a day, about two hours or more at a time, and walks all about the upstairs rooms. There is practically no pain and the general appearance is that of convalescence.

The treatment varied, of course, with the conditions. Nitroglycerin, in doses varying from 1/100 to 1/50, has been given from the first. Nitrite of amyl was given occasionally when it was feared that the pain would become severe. Theobromin was given once or twice a day for several weeks, but the benefit was not marked. Stomach tonics and digestants were given as indicated; veronal in 5-gr. doses at bedtime whenever the patient desired. The results were always pleasant and always beneficial — the patient feeling better than usual the next day.

Some six or eight weeks ago the question arose as to whether some of the symptoms might be due to malaria, wherefore she was given capsules of svapina, 1 gr., and quinin 2 gr., every four hours, or rather four times a day—at 8, 12, 4 and 8 o'clock. Since she has been taking these drugs she has had comparatively little pain; whether it is merely a coincidence or not, no one can tell. The patient herself has great faith in them.

My object in reporting this case was not because of its rarity, but to call your attention to three or four questions of interest:

1. Is there any condition or symptom or sign, or combination of signs that will warrant us in predicting the onset of an attack of angina pactoris?

2. What is the cause of angina pectoris or the causes?

3. What is the cause of the sudden death occurring so frequently in these cases?

4. What is the best method of treatment?

First, as to whether anything can enable us to predict the onset of this condition with any degree of certainty. A patient presents himself with a complaint of precordial uneasiness and perhaps an apprehension of some heart trouble. Examination shows the heart beating regularly, slight (if any) increase in the area of precordial dullness, the apex beating in the right place, the first and second sounds heard clearly and apparently normal; when the patient is quiet, no trouble with breathing. The verdict is a normal heart, and a probably faulty stomach. But if, after more or less active exercise, there develops an abnormal sound at the aortic valves, especially if we find aortic insufficiency, we are justified in making a guarded diagnosis of heart trouble with *possible* angina pectoris in the not distant future, especially if there be high blood-pressure. And we base this diagnosis on the high blood-pressure, the precordial uneasiness and the aortic lesion manifesting itself after exertion. We justify ourselves in this diagnosis because we know that the function of the coronary arteries is so greatly influenced by the conditon of the aorta and its valves, and the high blood-pressure would indicate probable sclerosis of the aorta, with involvement of the valves and possibly the coronaries.

Second, what is the cause of angina pectoris, or what gives rise to these severe anginous attacks? As exciting causes, we have walking, digestive disturbances, bending over, anger, anxiety, etc. But these could not, either individually or collectively, bring on an attack of angina in a healthy heart, or rather, in one whose blood-supply is normal. The real and indispensible condition on which these anginous attacks depend, is an ischemia due to failure of the coronary arteries to furnish the amount of blood that the heart needs. In the great majority of cases this is due to stenosis of these arteries. Sometimes, however, it is due to spasm, induced by toxins, etc., circulating in the blood. (That toxins have this influence has been experimentally shown by their action on hearts removed from the body.) Again, some argue that dilatation of the heart may cause angina by overdistention, basing the argument on anology, the stomach, intestines, gall-bladder, etc., causing similar pain when overdistended. Also, it has been shown in Porter's laboratory that acute distention of the heart lessens the flow of blood through the coronary arteries and therefore may cause an acute ischemia and consequent angina.

But let me quote Krehl. He states: "We also do not know what causes the pain of angina pectoris. Arteriosclerosis of the coronary arteries is certainly present in most cases, frequently causing a narrowing of the lumen of the vessel. Perhaps it is the anemia of certain parts of the heart that causes the pain. Such a theory finds an analogy in the condition known as intermittent claudication, in which, owing to a narrowing of the arteries, pains and disturbances of function develop in the legs whenever the patient walks some distance. In some cases the anginal paroxysms cease, and this has been attributed to a reopening of the vessel, although we have no proof of such a hypothesis."

"Nothnagel believes that the pain may originate from the vessels themselves. Such a hypothesis, attributing the pains of angina directly to the spasmodically contracting vessel, is very attractive. It would explain the fact that these paroxysms of pain may occur without anatomical disease of the coronary vessels, as has been observed in nervous individuals, and especially in those who use tobacco to excess. Many other questions in relation to angina are still unanswered, as, for instance, the reason why the pains radiate to the left branchial plexus; the cause of the syncope in some cases; and finally, the cause of sudden death. Every attack of true angina is a menace to the life of the individual and not infrequently the patient dies during the attack. In only one other condition do we see an equally sudden death, and that is in coronary embolism. The cause of sudden death has never been explained."

Hirschfelder states: "It is evident that the heart beat in the sudden death that occasionally occurs may be due either to the occlusion of the artery or to a sudden onset of complete heart-block, as in the Adams-Stokes syndrome. The latter condition is sometimes associated with angina pectoris and very frequently with coronary sclerosis."

I think that Hirschfelder is right in stating that death from heart-block is at least possible in the cases of angina vera, and I am strengthened in this belief by the history of the present case. Herberden (quoted by Hirschfelder) who has

given one of the best clinical pictures of angina that I have seen, says that the pulse, in these attacks of severe pain, was not quickened materially, nor much disturbed. My own experience corroborated this. But this patient had frequent seizures (if I may so term them) when the pain was slight, but the pulse would rapidly run up from 66 or 68 to 112 or 115, and would become weak and irregular. I did not listen to the heart at these times, but I do not doubt that if I had done so, I should have found more or less interference with the transmission of pulsations from the auricle to the ventricle. Once there was almost complete heart-block with the intense consciousness of impending death, yet with no pain. I think, therefore, that many of these patients (if not all of them) known to have suffered from true angina pectoris who are found in the morning, dead in bead, with no signs of struggle or suffering, die from heart-block rather than angina.

Our fourth question, how shall we treat true angina pectoris? finds little divergence of opinion. All seem to agree on the use of nitrite of amyl at the onset of an attack, to be followed by nitroglycerin, nitrite of sodium or some other nitrite. During the intervals, between the anginal attacks, some form of iodin—preferably iodid of potassium or sodium—is the accepted medicament. In addition to these, there is little to be said. Whether the constant administration of an opiate (as in this case, one grain of svapina and two grains of quinin every four hours) can be of any lasting benefit, I cannot say. I can only say that in the present instance this combination of svapina one grain and quinin two grains, was given continuously the past two months, and during that time there has been no angina of any consequence. The blood-pressure has also come down from 180 to 155.

Forchheimer states that anyone suffering from angina pectoris is in imminent danger of collapse, and should always go prepared with heart stimulants such as caffein and digalen. The question suggests itself whether this collapse, so-called, calls for cardiac stimulants or cardiac relaxants. A few years ago the collapse of athletes after strenuous exertion was attributed to acute dilatation of the heart, whereas Groedel, Mowitz, Dietelen and others, have recently shown that in many of these cases the heart was strongly contracted instead of dilated.

THE CARE OF SUSPECTED MAD DOGS

The following points should be borne in mind:

Point 1. If possible to avoid doing so, do not kill a supposedly rabid dog; keep him securely chained or confined for ten days. A *negative* diagnosis may be made from the living animal, if during the ten-day confinement it remains healthy. As long as it remains healthy it should not be killed and there is no need to send it for laboratory diagnosis.

Point 2. If an animal suspected of rabies, dies, its head should be sent immediately, or better, brought by messenger, to the Pasteur Institute for laboratory diagnosis. Address all such parcels: "Pasteur Institute, Medical Building, University of Michigan, Ann Arbor, Mich. Rush. Prepaid."

Point 3. If the report of the institute states that the dog had rabies, anyone infected by the saliva, either through a bite or other wound, should report *immediately* at the Pasteur Institute for treatment. The cost of this treatment is $25 to residents of Michigan. No provision is made by the Pasteur Institute for board or room, but these may be obtained in Ann Arbor at a nominal cost.

Point 4. In localities where the disease is known to exist, all dogs should be muzzled with either wire or properly fitting strap muzzles. The ordinary strap muzzle is in most cases useless in serving the purpose for which it is intended. To prevent the animal's biting the muzzle should be properly fitted.

Point 5. All dogs known to have been bitten by a rabid dog should be killed.

Point 6. As an essential preliminary measure all wounds through which the saliva of the animal may have entered, whether bites or scratches, should be cauterized immediately with *commercial formalin.* This precautionary measure, indeed, should not be neglected after a delay of one or even two days.

TREATMENT OF EMPYEMA

1. Empyema of infancy has a high mortality under any method of treatment yet proposed.

2. One of the chief obstacles to recovery is the difficulty in expansion when the lung is subjected to atmospheric pressure. This rather than imperfect drainage is the principal factor in causing the present high mortality.

3. Aspiration, while occasionally sufficient to cure a localized empyema, is not to be depended on as a means of treatment.

4. The injection of bactericidal substances is not greatly superior to simple aspiration, and is open to the same dangers.

5. Rib resection is not to be advised in recent acute cases in patients under two years old. In chronic cases it may be necessary at any age.

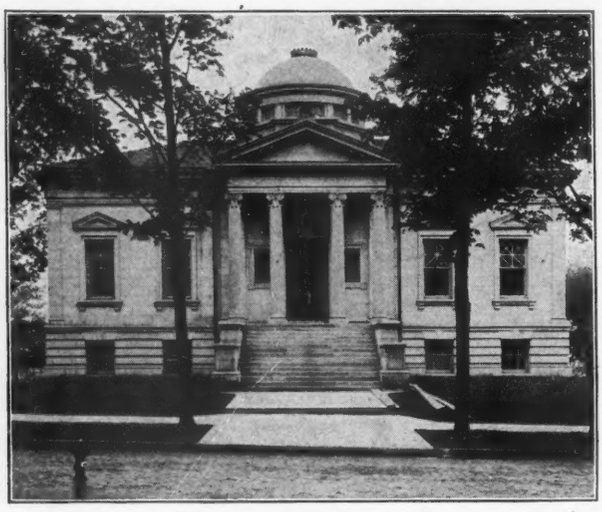
6. Simple incision between the ribs with the introduction of a single tube is sufficient in most cases to secure adequate drainage. It accomplishes in recent cases all that rib resection can do with less disturbance to the patient.

7. Siphon drainage is to be preferred to any other treatment in infants, especially those under one year, giving not only proper drainage and facilitating expansion of the lung, but causing the least disturbance of the patients during the treatment and showing the highest proportion of recoveries.—Holt, *American Medicine.*

FORTY-EIGHTH ANNUAL MEETING

The City of Flint

When the city of Flint raised upward of $100,000 a few weeks ago for the establishment of a Young Men's Christian Association and the erection of a splendid building that is to be fully equipped to meet the needs of the thousands of young men employed in its factories, stores and



Flint Public Library

offices, it gave further substantial evidence of the enterprising, progressive and operative spirit that has earned for it the reputation of being the best city of its size in the United States. In a vigorous campaign carried on during the third week of June, half a hundred teams composed of business men and factory employees put their shoulders to the wheel for the achievement of an enterprise that will redound incalculably to the physical, mental and moral welfare of the youth and young manhood of the city, and working side by side, enthusiastically, loyally and harmoniously, in six short days they attained the goal of $100,000, fixed as the objective of their efforts and added another $12,000 for good measure. The campaign was a magnificent success and a test of the civic pride and resources of Flint that was typical of the city that does things and does them right.

POPULATION

There is no city in the state of Michigan and probably none in the United States, that can be cited as a parellel to Flint in respect of industrial advancement and increase in population within the last decade. When the statistics of the last federal census were made public a little over two years ago, widespread attention was attracted toward Flint, because of the fact that it was accorded the distinction of having outstripped all other cities of its class in the United States in growth of population and industrial prestige during the decennial period from 1900 to 1910. During that time Flint increased in population from 13,103 to 38,550, and to-day it has a population of more than 42,000. This remarkable growth naturally entailed many new responsibilities that had to be met by the city.

CIVIC IMPROVEMENT

During this period 6,000 houses were erected, and this meant the opening and improvement of many new streets and greatly increased sewer facilities. Much has already been done in keeping pace with the growth of the city in the matter of public improvements, and that much more is to be done in the immediate future is evidenced by the fact that at a special election held this spring nearly $300,000 was voted by the taxpaying electors to be placed at the disposal of the city administration for the building of new pavements, the improvement of streets in the residential sections of the city and the construction of additional sewers. In addition to this public work, the board of education has been active in

City Hall

providing increased school facilities, and to-day there is in process of completion a new school building in the Sixth Ward, costing $75,000; ground has been broken for a $70,000 school building in Homedale subdivision and plans are being prepared for another modern structure that is to be a duplicate of the Homedale school build-

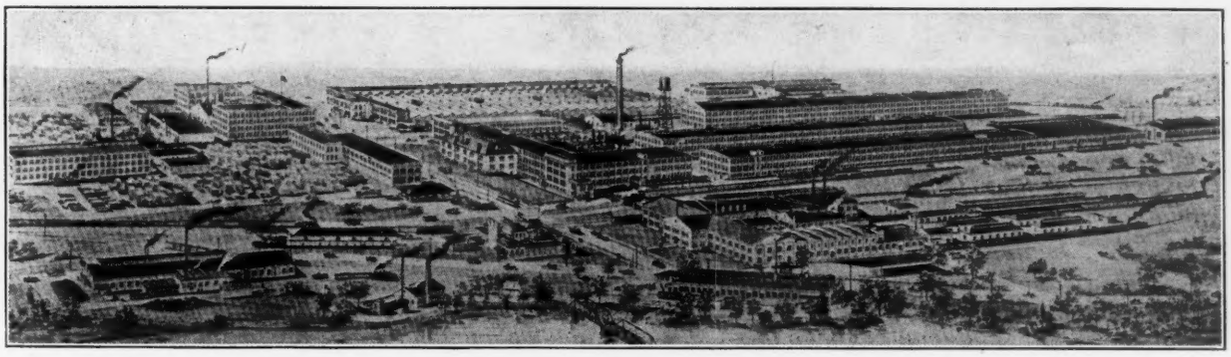
ing. Thus the city is meeting its obligations to its rapidly increasing citizenship in regard to public conveniences and educational facilities, and it is now turning its attention to the welfare

Michigan School for the Deaf

of its youth and young manhood, as has already been indicated in the introduction of this article. A Young Men's Christian Association and home has been in successful operation for the past two or three years, and now the boys and young men of the city are to be similarly taken care of through the erection of a Young Men's Christian Association building that will be one of the finest and best equipped institutions of its kind in the state of Michigan.

AUTOMOBILE INDUSTRIES

Flint is the home of the largest automobile plant in the world—the Buick—and is the hub of a circle embracing seven Michigan automobile manufacturing cities — Detroit and Pontiac on the southeast, Jackson and Lansing on the southwest, Owosso on the west, Saginaw on the north and Port Huron on the east; all within a radius of seventy miles of Flint. Time was when lumbering was the principal industry of the city, but the saw mills that formerly lined the banks of Flint river have long since passed away. Then came the carriage industry, which placed Flint in the foremost of the vehicle field, but while the manufacture of carriages still constitutes an important factor in the industrial prestige of the city, the building of automobiles has taken rank as the leading indutry. The Buick, with its army of between 5,000 and 6,000 skilled mechanics, its total floor space of fifty-eight acres, and its grounds covering an area of 150 acres, that only a few years ago was farm land located outside of the city limits, wields its giant industrial arm in the manufacture of 30,000 cars annually, and besides this mammoth institution there are the Paterson, the Little and the Chevrolet factories employing a large number of workmen and producing cars that have helped to make Flint famous as an automobile center. Next in importance to the automobile and carriage activities of the city is the manufacture of cigars, for which Flint has long been famous. This industry employs hundreds of high-class workmen and produces annually about 12,000,000 cigars.



Buick Motor Company

PUBLIC BUILDINGS

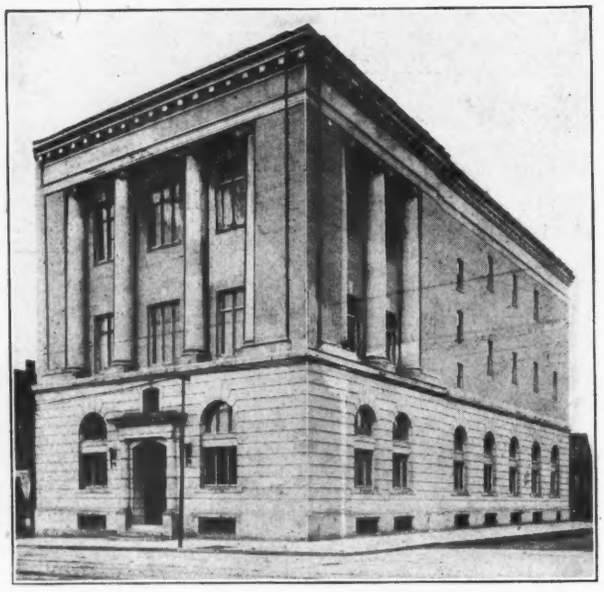
The city government has at its head a practical and successful business man, Mayor Charles S. Mott, president of a company which employs

Brown Hall, School for the Deaf

2,200 men. Under his progressive administration Flint has made remarkable strides the past year in the way of pavement and sewer building and the acquisition of other public improvements.

During the same period there has been in process of construction a $400,000 pumping station and filtration plant, which will be in operation this summer, furnishing pure water to the inhabitants of the city. The progressive policy of the municipal government has also been reflected in the recent withdrawal of horse-drawn equipment from the central fire station and the substitution of complete equipment of motor-driven apparatus. There are three other fire stations which are partially equipped with motor-driven apparatus, which will ultimately entirely replace the horse-drawn equipment in the city fire department.

Unexcelled schools and churches contribute to the welfare and peace and contentment of the community, and in other respects Flint offers advantages and attractions that make for wholesome and helpful living conditions. Its resident streets are lined by beautiful homes and well-kept lawns, and its shade trees form an almost unbroken canopy over the city when in full foliage. Its public buildings and institutions include the county court house, the city hall, the Masonic Temple, the Carnegie Library, the Young Women's Christian Association building, the federal postoffice building; all erected within the past eight years, and the Michigan School for

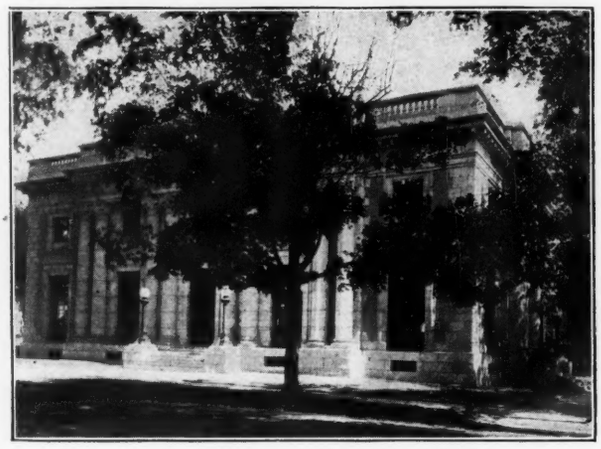


Masonic Temple

the Deaf. Work has been commenced for the foundation for a fine Elk's Temple to cost in the neighborhood of $70,000, and as has been noted, the latest expression of public spirit on the part of the citizens of Flint is about to take on material form in the erection of a Y. M. C. A. home.

AREA AND PARKS

Flint covers an area of 12.83 square miles and is between 700 and 800 feet above sea level. It has 150 miles of streets; 12 miles of which in the business section are already paved, with an additional 12 miles to be paved during the present



W. S. Post Office

year; 42 miles of public sewers, with provision made for greatly increasing the present sewerage facilities; 8 miles of electric street railway and 50 miles of gas mains. The city has nine public parks, comprising a total of 41 acres, and a comprehensive boulevard system, planned by an expert, is in process of development and will ultimately connect all the public parks. A recent addition to the park system is the homestead property of the late Dr. James C. Willson, one of the pioneer physicians of Genesee County, which was acquired by purchase this year and is a delightful breathing spot in the heart of the city. Thread Lake Park and Water Works Park are situated, respectively, in the south end and north end of the city, and on alternate Sunday afternoons the Salvation Army Band, one of the best musical organizations of the state, gives free open-air concerts under the auspices of the City Park Board and the Board of Commerce, besides giving concerts on Wednesday evenings in the downtown business section of the city. The places of amusement include Lakeside Park, on the banks of Thread Lake; an opera house playing standard attractions, two smaller playhouses and half a dozen moving picture theaters.

GENESSEE COUNTY

Flint is favorably located in one of the most productive and prosperous counties of the state of Michigan. Genessee County is rich in products of soil, for which Flint, as the county seat, is the natural market. Its farmers are intelligent

and progressive, and its broad acres are dotted with pleasant rural homes and substantial farm building. It has a solid system of rural free delivery and is traversed by rural telephone lines radiating from the city in all directions. It is now engaged in building a system of permanent highways, under a bonding proposition involving $500,000, which was approved at the election last spring by a heavy majority. It is alert and progressive along other lines and constitutes a strong support to the business interests of the city.

TRANSPORTATION FACILITIES

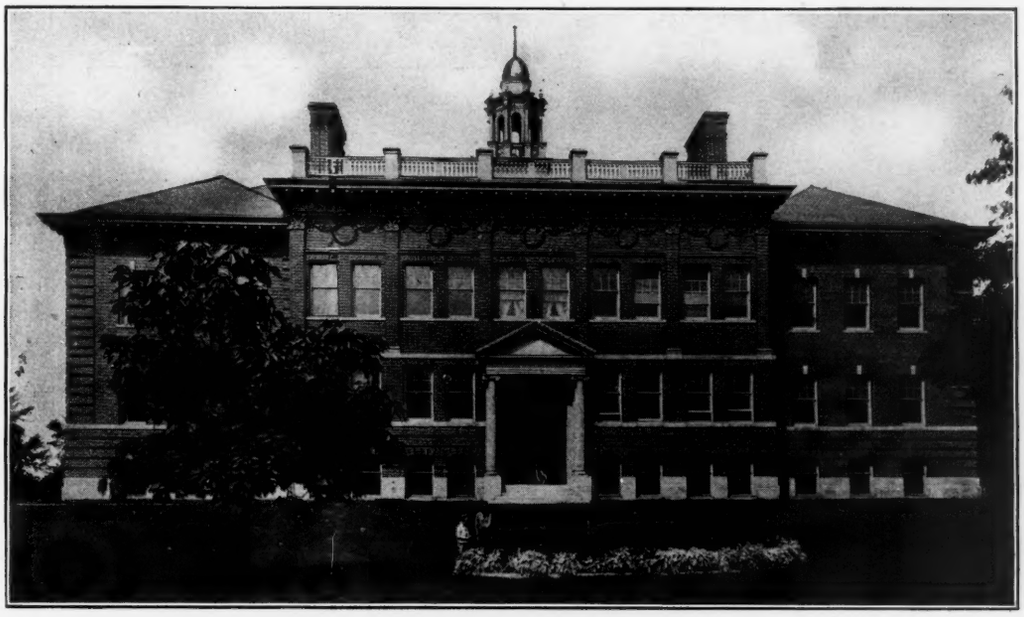
Flint is also well favored in the matter of transportation facilities, being on the main lines of the Grand Trunk and Pere Marquette steam railroads, extending east and west, and north and south; while additional passenger and freight service north and south is afforded by the Detroit United and the Saginaw & Flint electric railways.

BANKS

The banking interests of Flint are extensive and in conservative and safe hands. There are four state banks and one national bank, and all are operated on a sound financial basis. In this connection it is significant of the material prosperity of the city that the bank clearing for 1912 was $21,310,000, as compared with $19,825,000 for the preceding year. Two other significant facts concerning Flint are that its average daily wage of $2.82 is the highest in Michigan, and its tax rate of $19.70 per $1,000 of assessed valuation is the lowest in the state.

BUSINESS AND PROFESSIONAL MEN

Flint has as fine a class of business and professional men as are to be found in the country. They work together in a spirit of helpfulness and loyalty to the general business interests of the city, and when such an occasion as the recent Y. M. C. A. campaign arises, they may be counted on to work vigorously and harmoniously together with a common purpose of furthering the interests of the city. This is a feature of industrial, commercial and professional life in Flint that has been an important factor in making it what it is to-day—a great industrial city, with a still greater future stretching out before it and beckoning it on to higher achievements than have yet been attained in the comparatively recent period of its greatest growth and prosperity.



One of Flint's Many Modern School Buildings

Hurley Hospital

Founded by James J. Hurley and bearing his name, Flint's municipal hospital, one of the best equipped and most modern hospitals in the state of Michigan, is an institution of which any city might well feel proud.

Located on high ground just within the western limits of the town, its situation commands a view of the surrounding country and constitutes an ideal spot for a hospital.

BUILDINGS

The buildings are of colonial design, the architectural effect being one of simplicity and eleglance. A two-story administration building with three wings, those on the north and south con-

nected with the main building by bright, sunny corridors, constitute the original hospital. A basement extending under the main building, west wing and corridors, furnish space for dining rooms, kitchens, store-rooms, laundry and boiler rooms. During the past year additional accommodation for patients has been added by raising the west wing and connecting it with the upper floor of the main building, in which are located three splendidly equipped operating-rooms, two for general work and one for the specialties of eye, ear, nose and throat. The new addition increases the capacity of the hospital by seven private rooms and eight ward beds.

The north wing, in which is located the women's ward with ten beds, furnishes accommodations also for eight private room patients. The south wing, containing a ward for men with fourteen beds, contains five private rooms.

OWNERSHIP AND STAFF

Hurley Hospital is owned and operated by the city of Flint, and is managed through a board of five members appointed by the Common Council. The superintendent is Miss Anna M. Schill, graduate of the Grace Hospital, Detroit. There is no medical staff, all physicians of the county having equal privileges in the use of its operating rooms and other equipment. From Dec. 19, 1908, the date of opening the hospital, to Feb. 28, 1913, the end of the last fiscal year, 2,937 patient had been admitted to the institution.

The Oak Grove Hospital, Flint

The corporation of Oak Grove was organized in 1891, under the laws of Michigan. The object of the founders was the construction and

Hurley Hospital

TRAINING SCHOOL

Until within the last year, the nurses of the training school were provided with quarters in the main building and in rented rooms in the neighborhood. Last October there was opened for their use a beautiful new home just north of the hospital, on the hospital grounds, the furnishings of the home being the gift of the late Dr. James C. Willson, well known to and beloved by the medical profession of Michigan. The home, built along colonial lines to correspond with the architecture of the hospital, is of three stories. The material used in its construction is red brick like that in the original buildings.

The present total value of the hospital property is over one hundred thousand dollars. This will be increased next year by the addition of a large ward for the care of children and for maternity work. The need for a contagious disease cottage must also be met before long.

equipment of a thoroughly modern hospital wherein nervous and mental diseases, and alcoholic and drug addiction, might be treated by the most approved methods.

THE GROUNDS

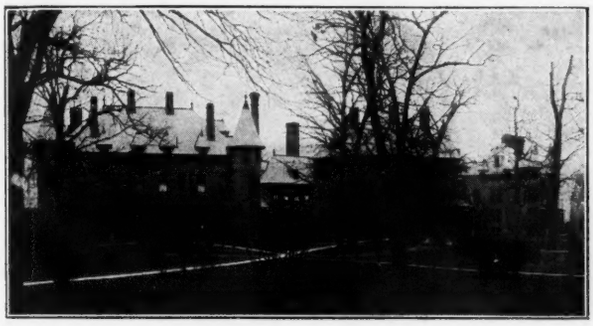
A 60-acre grove of native oaks, located on the eastern margin of the city of Flint, was selected as a site. These magnificent trees, many of them centuries old, comprise what is now, in all probability, the last remaining oak clearing of its size in Michigan. This park had been preserved by the late Henry H. Crapo, a distinguished governor of the state and a citizen of Flint, his intention being to erect a mansion in its midst.

THE BUILDINGS

In this ideal location four buildings were opened for the reception of patients in the summer of 1891. Since this time, continuous growth and increasing demands have necessitated the

addition of new structures, until the present group consists of seven, exclusive of cottages, out-buildings, stables and garage.

All buildings are of pressed brick and slate



Oak Grove Sanitarium

construction. The pivotal structure of the group is the administration building. This contains, on its first floor, the reception hall, reception room, medical and executive offices, laboratory and dispensary. The second floor is occupied by the apartments of the medical director. The third provides guest rooms and quarters for other members of the medical staff.

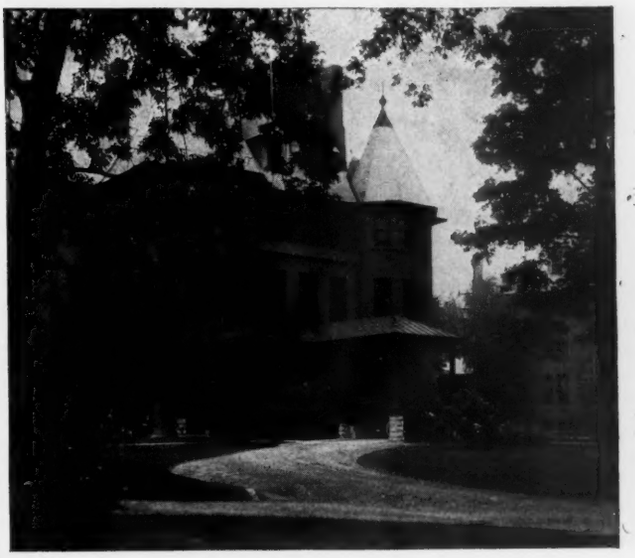
To the east of the administration building and connected with it by a semicircular, glass enclosed corridor, is the department for women. To the west, connected with the administration building by a similar corridor, is the department for men. Each of these departments consists of two buildings, the larger being assigned to nervous, neurasthenic and convalescing patients, and the

East from Women's Department

smaller to the acute insane. In each of the larger buildings the first and second floors are devoted to the care of patients. The third provides quarters for nurses. Each floor contains ten sleeping apartments, baths, halls and a parlor. Rooms are arranged for use singly, or en suite with bath.

The Parterre Building, for acute cases (women) was erected in 1900. A glass enclosed corridor, 60 feet in length, connects it with the administration building. The first floor is devoted to the care of patients and contains six rooms, in addition to a diet kitchen, hydrotherapeutic and massage room and parlor. The second floor is assigned to women nurses and contains separate sleeping apartments and a parlor.

The Ormeau Building for men, erected in 1906, provides similar care for acute cases. It contains on its first floor ten patients' bedrooms, parlors, diet kitchen, tub and shower baths and massage room. The second floor is occupied by rooms for men nurses. This building has several



Administration Building

spacious verandas and a charming outlook on the south grove. Like the Parterre Building for women, it permits a more satisfactory classification of patients, facilitates the care of restless and disturbed cases and adds materially to the comfort of the convalescent and quiet.

All rooms throughout the institution are heated by indirect radiation and ventilated by flues. In some additional heating facilities are provided by fireplaces. Interior furnishings throughout are of a character calculated to please those of cultivated tastes.

Noyes Amusement Hall, erected in 1895, contains a music room, a lounging and smoking room, a billiard, pool and card room, dancing hall, bowling alley and gymnasium. There are also Turkish and Russian baths, a room equipped for electrotherapy and complete Baruch hydrotherapeutic apparatus.

Heating facilities and electric light are provided by a plant erected for the purpose in 1907.

The water-supply is derived from an artesian well, located on the grounds. The hospital has a thoroughly modern plant for refrigerating and ice manufacture. Each department of the household has a general dining room. Appointments and service are dainty and the cuisine excellent.

THE MANAGEMENT

The executive management of the hospital is vested in a board of directors of which the following are members:

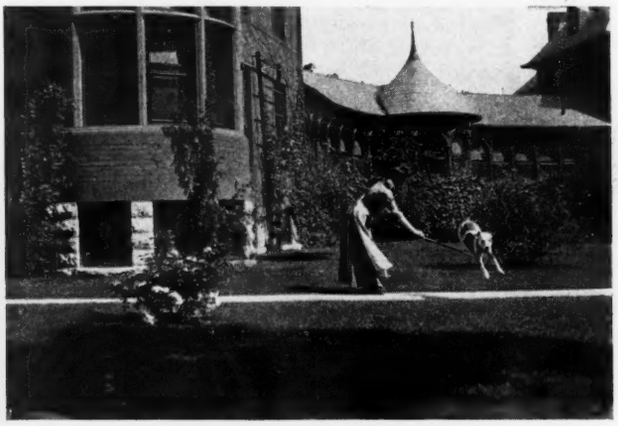
Women's Department

Mr. George B. Remick, Detroit, president.
Dr. W. H. Sawyer, Hillsdale, vice-president.
Dr. C. B. Burr, Flint, secretary.
Mr. W. O. Smith, Flint, treasurer.
Mr. Jerome H. Remick, Detroit.
Mr. C. M. Begole, Flint.
Dr. H. R. Niles, Flint.
Mr. Wm. A. Butler, Jr., Detroit.
Dr. E. A. Christian, Pontiac.
Mr. Stanford T. Crapo, Detroit.

THE MEDICAL STAFF

The internal management of the hospital is strictly professional. The resident medical staff consists of three members as follows:

C. B. Burr, M.D., medical director.
H. E. Clarke, M.D., assistant medical director.
P. M. Crawford, M.D., assistant physician.



Corridor to Men's Department

Dr. C. B. Burr, formerly superintendent of the Pontiac State Hospital, has been for thirty-four years exclusively engaged in the treatment of nervous and mental diseases.

Dr. H. E. Clarke, also a former member of the staff of the Pontiac State Hospital, has been for twelve years in the specialty.

Elm Magnificent

Each patient receives the daily attention of the medical director, also two visits from each assistant. An efficient nursing force is maintained. The hospital has been perhaps more than usually successful in retaining the services

of capable nurses and many of the present force have a record of faithful service extending over a number of years.

Provision is made for amusements in large variety. Secluded and private walks, and the natural beauties of the grounds invite patients to outdoor exercise. Motor and carriage service is also provided. The croquet plats, tennis courts and golf links prove attractive to many. In the eastern part of the grounds may be found "Elm Magnificent" worthy of special notice. Among the indoor amusements are dancing and card parties, bowling, pool and billiards, music and motion picture entertainments.

During the twenty-two years it has been in operation, the hospital has cared for patients representing nearly every state in the Union, the provinces of Ontario and Quebec and the republic of Mexico. Conscientious professional work, with freedom from distracting influences and institutional features, have made possible a degree of success in the treatment of these difficult cases, which has been substantially augmented by the cooperation and support of the medical profession, especially those of its members interested in patients under care.

Preliminary Program

OFFICIAL CALL

The Forty-Eighth Annual Meeting of the Michigan State Medical Society will be held in Flint, Genessee County, Michigan, on Thursday and Friday, September 4 and 5, 1913. The Fifth Annual Meeting of the County Secretaries' Association will be held on Wednesday afternoon, September 3, at 3 p. m. The Council will meet in regular session on Wednesday evening, September 3, at 8 o'clock.

WALTER H. SAWYER, President.
FREDERICK C. WARNSHUIS, Secretary.

PLACE OF MEETING

The General Session, the House of Delegates and all Scientific Sessions will meet in the Masonic Temple. The exhibitions will also be located in this building. The County Secretaries' Association will meet in the Masonic Temple at 3 p. m., September 3. The first session of the Council will be held in the parlor of the Hotel Dresden Wednesday evening, September 3, at 8 p. m.

THE COUNCIL

Chairman, William T. Dodge, Big Rapids.
Vice-Chairman, A. E. Bulson, Jackson.
Secretary, Frederick C. Warnshuis, Grand Rapids.

Meetings

Wednesday, September 3, at 8 p. m.
Thursday, September 4, at 12 m.
Friday, September 5, at 12 m.

HOUSE OF DELEGATES

Masonic Temple.

President, Walter H. Sawyer, Hillsdale.
Secretary, Frederick C. Warnshuis, Grand Rapids.

By-Laws—Chapter IV, Section 1. Each component county society shall be entitled to send to the House of Delegates each year one delegate and one alternate for every fifty members, and one delegate for each major fraction thereof; but each county society holding a charter from this society, which has made its annual report as provided in the Constitution and By-Laws, shall be entitled to one delegate and one alternate.

First Session, Thursday, September 4th

8:00 A. M.

Order of business:

1. Call to order by the President.
2. Report of Committee on Credentials.
3. Roll Call.
4. Reading of the minutes of the last Annual Meeting.
5. Report of the Council.
   W. T. Dodge, Big Rapids, Chairman.
6. Report of the Committee on Legislation and Public Policy.
   E. T. Abrams, Dollar Bay, Chairman.
7. Report of the Committee on Fee Splitting.
   C. B. Stockwell, Port Huron, Chairman.
8. Report of the Committee on Public Health Education.
   Frances Rutherford, Grand Rapids, Chairman.
9. Report of the Committee on the Study and Prevention of Tuberculosis.
   Collins H. Johnston, Grand Rapids, Chairman.
10. Report of the Committee to Encourage the Systematic Examination of the Eyes and Ears of School Children Throughout the State.
    Walter R. Parker, Detroit, Chairman.
11. Report of the Committee on Medical Education.
    David Inglis, Detroit, Chairman.
12. Report of the Committee on Venereal Prophylaxis.
    A. P. Biddle, Detroit, Chairman.
13. Report of the Delegates to the American Medical Association.
    E. T. Abrams, Dollar Bay, Chairman.
14. Report of the Committee on Specialties.
    Emil Amberg, Detroit, Chairman.
15. Election of Committee on Nominations.
    The duty of this committee is to nominate:
    (a) 1st, 2d, 3d and 4th Vice-Presidents.
    (b) To nominate one delegate and one alternate delegate to the House of Delegates of the American Medical Association to succeed E. T. Abrams, whose term expires
    (c) To nominate Councilors for the 2d, 8th, 9th and 12th districts.
    (d) To fix the place of meeting for 1914.
    By-Laws—Chapter VI, Section 2. The House of Delegates shall elect annually, at its first meeting, a Nominating Committee of five from the House of Delegates; no two of whom shall be from the same Councilor District.
16. Appointment of Business Committee and other working committees by the President.

17. Miscellaneous Business.
    (a) Recommendations of the Council.
    (b) Proposal of amendments to the Constitution and By-Laws.
18. New Business.
19. Adjournment to the General Session.

Second Session, Friday, September 5th

8:00 A. M.

1. Roll Call.
2. Reading of Minutes of Previous Session.
3. Report of Business Committee.
4. Reports of Appointed Committees.
5. Report of the Committee on Nominations.
6. Election of Officers.
7. Unfinished Business.
8. Miscellaneous Business.

Adjournment to Section Meetings.

GENERAL MEETING

Thursday, September 4th

10 A. M.

Masonic Temple Auditorium.

President—Walter H. Sawyer, Hillsdale.
Secretary—Frederick C. Warnshuis, Grand Rapids.

1. Call to order by the President.
2. Invocation.
3. Address of Welcome by C. S. Mott, Mayor.
4. Address of Welcome by Noah Bates, President Genessee County Society.
5. Response on Behalf of State Society by Walter H. Sawyer, President.
6. Report of the Committee on Arrangements. H. E. Randall, Flint.
7. Report of the House of Delegates by the Secretary.
8. Annual Address of the President, "District Supervision of Public Health." Walter H. Sawyer, Hillsdale.
9. Address, Woodbridge N. Ferris, Governor, State of Michigan.
10. Miscellaneous Business. Under this head there will be a general discussion of questions of medical economics. The opportunity is presented to every member to bring before the entire Society any subject of general interest, either by informal discussion or formal resolution.

Nominations for President for 1913-1914.
Adjournment.

SECOND GENERAL SESSION

Friday, September 5th

11:30 A. M.

1. Reading of Minutes.
2. Unfinished Business.
3. Report from the House of Delegates.
4. Miscellaneous Business. Another opportunity is given to present to the attention of the general body questions of general interest.
5. Announcement of the Committee on Nominations of the result of the ballot for President.
6. Introduction and Installation of the President-elect.
7. Resolutions.
8. Adjournment *sine die*.

COUNTY SECRETARIES' ASSOCIATION

Fifth Annual Meeting

Wednesday Afternoon, September 3d
3:00 P. M.

Masonic Temple

President—Charles E. Boys, Kalamazoo.
Secretary—C. T. Southworth, Monroe.

ORDER OF BUSINESS

1. Call to order by the President.
2. Roll Call.
3. President's Address. Charles E. Boys, Kalamazoo.
4. Address by President of the State Society, Walter H. Sawyer, Hillsdale.
5. Paper. (Subject to be announced.) Roland Clark, Wayne County.
6. Address by the Secretary of the American Medical Association. Alex. R. Craig, Chicago.
7. Paper, "Shall the Programs of the County Meetings Be Made Up of Home Talent or by Invited Guests Outside the County?" E. M. Highfield, Gratiot County.
8. Dinner as Guests of the State Council.

NOTE.—No discussers have been selected to open the discussion of the papers. It is expected that every secretary will participate in the discussion. During the dinner an opportunity will be presented to discuss the various problems with which the county secretary has to contend and to ascertain how the secretary of the other county accomplishes his work. No secretary can afford to miss this meeting. No county should neglect to insist that its secretary attend this meeting.

SCIENTIFIC SECTIONS MEETINGS

By-Laws—Chapter III, Section 3. Except by special vote the order of exercises, papers and discussions as set forth in the official program shall be followed from day to day until it has been completed. No paper shall be read by title nor read by any other person than its author, except as a result of sickness of the author, or by the unanimous vote of the Section to which it belongs.

Sec. 4. No address or paper before the Society, except that of the President, shall occupy more than fifteen minutes in its delivery; and no member shall speak more than five minutes or more than once on any subject.

Sec. 5. All papers read before the Society shall be its property. Each paper read shall be immediately deposited with the Secretary of the Section.

SECTION ON OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Chairman—Eugene Smith, Detroit.
Secretary—H. Beach Morse, Bay City.

(As soon as a paper has been read it is to be filed with the secretary.)

First Session, Thursday Afternoon, September 4th

1:45 P. M.

1. Chairman's Address. EUGENE SMITH, Detroit.
2. Paper. C. H. BAKER, Bay City.
3. "Injuries to the Head and Ear Disturbances." EMIL AMBERG, Detroit.
4. "Report of Seventy-Five Cataract Extractions." D. EMMETT WELSH, Grand Rapids.
5. Paper. WILFRID HAUGHEY, Battle Creek.

Second Session, Friday Morning, September 5th

9:00 A. M.

6. "Acute Pharyngitis." B. N. COLVER, Battle Creek.
7. Paper. DON M. CAMPBELL, Detroit.
8. Personal Experiences with the Submucous Operation." ANNA O'DELL, Detroit.

Adjournment to the General Session at 11:30 a. m.

Third Session, Friday Afternoon, September 5th

1:45 P. M.

Election of officers.

9. "Trephine Operations in the Treatment of Glaucoma." WALTER H. PARKER, Detroit.
10. "The Relation of Ocular Symptoms to Remote Disorders." P. J. LIVINGSTON, Detroit.
11. Paper.
12. Paper.

SECTION ON GENERAL MEDICINE

Chairman—James Cleland, Jr., Detroit.

Secretary—Benj. A. Shepard, Kalamazoo.

First Session, Thursday Afternoon, September 4th

1:45 P. M.

(The Secretary of the Section will collect all papers as soon as they are read.)

1. Chairman's Address. JAMES CLELAND, Jr., Detroit.
2. "The Attitude of the General Practitioner Toward the Tuberculosis Problem." J. B. JACKSON, Kalamazoo.
3. "The Diagnosis and Treatment of Tuberculosis. Lantern Slide Demonstration." O. W. MCMICHAEL, Chicago.
4. "The X-Ray Diagnosis of Diseases of the Lungs. Lantern Slide Demonstration." A. W. CRANE, Kalamazoo.

Second Session, Friday Morning, September 5th

9:00 A. M.

5. "Spasmophilia." COLLINS H. JOHNSTON, Grand Rapids.
6. "The Present Status of Salvarsan in the Treatment of Syphilis." H. R. VARNEY and R. C. JAMIESON, Detroit.
7. Paper. (Subject to be announced later.) FRANK C. PENNOYAR, South Haven.
8. "Nervousness in Children." THEOPHIL KLINGMAN, Ann Arbor.
9. "The Need of a Differential Diagnosis of Type of Diphtheritic Bacillus in the Management of the Disease." BLANCH EPLER, Kalamazoo.

Adjournment to General Session.

Third Session, Friday Afternoon, September 5th

1:45 P. M.

Election of officers of Section for coming year.

10. "Heart Block with Report of Case." MARTIN A. MORTENSON, Battle Creek.
11. "Presentation and Discussion of Specimens Illustrating Endocarditis Caused by Streptococcus Viridans and the Streptococcus Rheumaticus and Points of Difference in their Clinical Manifestations. ROBERT H. BABCOCK, Chicago.
12. Paper. (Subject to be announced.) J. B. WHINERY, Grand Rapids.

SECTION ON GYNECOLOGY AND OBSTETRICS

Chairman—Ernest K. Cullen, Detroit.

Secretary—Walter Manton, Detroit.

(The secretary will collect all papers as soon as they are read.)

First Session, Thursday Afternoon, September 4th

1:45 P. M.

1. "Movable Kidney." E. T. ABRAMS, Dollar Bay.
2. "Early Diagnosis of Uterine Cancer." J. H. CARSTENS, Detroit.
3. "The Transposition Operation in Treatment of Cystocele." The result of fifteen years' experience. THOMAS J. WATKINS, Chicago.
4. Subject to be announced. REUBEN PETERSON, Ann Arbor.
5. "Chronic Appendicitis in Which the Signs and Symptoms Are Not Directly Referable to the Appendix." WM. F. METCALF, Detroit.

Second Session, Friday Morning, September 5th

9:00 A. M.

6. "Report of a Case of Placenta Previa." W. H. MORELY, Detroit.
7. Subject to be announced. W. P. MANTON, Detroit
8. "The Treatment of Nausea and Vomiting in Pregnancy." THOMAS J. LYNCH, Chicago.
9. "The Heart in Pregnancy." HUGO A. FREUND, Detroit.

Adjourn to General Session.

Third Session, Friday Afternoon, September 5th

1:45 P. M.

Election of officers.

10. "Stenosis of the Uterine Cervix." F. MATTHEWS, Detroit.
11. "Gall-Stones First Discovered at the Time of Pelvic Operation." ANGUS MCLEAN, Detroit.
12. "Vaginal Celiotomy in Ectopic Pregnancy." H. E. RANDALL, Flint.
13. "Pulmonary and Laryngeal Tuberculosis in Pregnancy." BENJ. R. SCHENCK, Detroit.
14. Subject to be named. R. R. SMITH, Grand Rapids.

SECTION ON GENERAL SURGERY

Chairman—Robert J. Hutchinson, Grand Rapids.

Secretary—R. C. Stone, Battle Creek.

(The secretary will collect all papers as soon as they are read.)

First Session, Thursday Afternoon, September 4th

1:45 P. M.

1. Chairman's Address.
   R. J. HUTCHINSON, Grand Rapids.
2. "Tuberculous Peritonitis."
   D. E. ROBINSON, Jackson.
3. "Supra-Pubic Prostatectomy."
   ANGUS MCLEAN, Detroit.
4. Subject to be announced.
   EDWARD JUDD, Mayo Clinic, Rochester, Minn.
5. "Bone-Grafting for Pott's Disease and Ununited Fractures." MAX BALLIN, Detroit.
6. "The Abdominal Skin Reflexes in Acute Inflammatory Conditions of the Abdomen and their Significance." RICHARD R. SMITH, Grand Rapids.

Second Session, Friday Morning, September 5th

9:00 A. M.

7. "Direct Blood Transfusion."
   WALTER VAUGHAN, Detroit.
8. Subject to be announced.
   M. L. HARRIS, Chicago.
9. "X-Ray Aid in the Recognition of Gastric and Duodenal Ulcers." J. T. CASE, Battle Creek.
10. "The Present Status of X-Ray in Diseases of the Stomach."
    P. M. HICKEY AND CHAS. D. AARON, Detroit.

Third Session, Friday Afternoon, September 5th

1:45 P. M.

Election of officers.

11. Subject to be announced.
    FRED M. COLE, Detroit.
12. "The Injection of Boiling Water in the Treatment of Hyperthyroidism."
    MILES F. PORTER, Fort Wayne, Ind.
13. Subject to be announced.
    WILLIAM FULLER, Chicago.
14. Subject to be announced.
    DEAN LEWIS, Chicago.
15. "Internal Medicine as the Basis of Good Surgery."
    H. B. GARNER, Detroit.

INVITED GUESTS

For this issue we are but mentioning the names of the invited guests of the society who will appear before the various scientific sections. In the September JOURNAL we will endeavor to give a little personal history of each one of these guests. The following are the men from outside of the state who will be the guests of the society at the Flint meeting:

Woodbridge N. Ferris, Governor of the State of Michigan.

Dr. Edward Judd, Mayo Clinic, Rochester, Minn.
Dr. M. L. Harris, Chicago, Ill.
Dr. Dean Lewis, Chicago, Ill.
Dr. Thomas J. Watkins, Chicago, Ill.
Dr. Miles F. Porter, Fort Wayne, Ind.
Dr. Thomas J. Lynch, Chicago, Ill.
Dr. Robert H. Babcock, Chicago, Ill.
Dr. O. W. Michael, Chicago, Ill.

ENTERTAINMENT

Wednesday Evening, September 3d.—Informal smokers at the hotels. It will be necessary for the members of the Council, the House of Delegates and the County Secretaries to arrive in Flint during the afternoon of the 3d in order that they may attend the first sessions of their respective meetings. These smokers have been provided for them and for the early arriving members.

Thursday Afternoon, 4:30 o'clock.—Visit to the Buick automobile plant.

Thursday Evening, 8 o'clock.—President's reception. On the lawn of the Oak Grove Hospital. To be followed by a dance.

FOR THE VISITING LADIES

Thursday Afternoon.—The ladies will be entertained at the Country Club.

Thursday Evening.—President's reception and dance.

Friday Afternoon.—Automobile rides around Flint.

REGISTRATION

The members are requested to register as soon as possible after their arrival. The Registration Bureau will be located in the main entrance of the Masonic Temple.

PRIVATE ROOMS AND BOARDING PLACES

The Entertainment Committee assure us that they will be able to comfortably care for every member that attends. First-class rooms in private homes may be secured by addressing: Dr. F. B. Miner, 400 South Saginaw street, Flint, Mich.

HOTELS OF FLINT

Hotel Dresden, official headquarters, 300, American. Rate, $2.50 up.

Hotel Bryant, 100, American. Rate, $2.25 up.

Hotel Reed, 64, American. Rate, $1.25 up.

Hotel Crystal, 62, American. Rate, $1.25 up.

Hotel Dayton, 46, American. Rate, $1.25 up.

Chairman Hotel Committee, Dr. W. G. Bird, Flint.

Chairman Private Rooms Committee, Dr. F. B. Miner, 400 South Saginaw street, Flint.

AUTOMOBILE ROUTES

The Automobile Blue Book contains practically every route to Flint, so that it has been deemed unnecessary to devote space to the publishing of these detailed routes in THE JOURNAL.

AUTOMOBILE GARAGES

Storage Rates.

Flint Garage, 913-915 South Saginaw street. Storage, 50 cents per night.

Auto Sales and Supply Company, corner Court and Saginaw streets, 75 cents per night.

Park Garage, corner Detroit and E. Second avenue, 50 cents per night.

Automobile Exchange, 514 North Saginaw street, 50 cents per night.

Gasoline, oil, wash and polish at standard rates.

HOUSE OF DELEGATES.—DELEGATES AND ALTERNATES TO THE FORTY-EIGHTH ANNUAL MEETING

Note.—The black-face type is that of the delegate; the other that of the alternate.

ALPENA—Branch No. 46

C. M. Williams, Alpena.
D. A. Cameron, Alpena.

ANTRIM—Branch No. 65

(One delegate.)

BARRY—Branch No. 26

(One delegate.)

BAY—Branch No. 4

J. W. Gustin, Bay City.
J. C. Grosjean, Bay City.

BENZIE—Branch No. 59

G. O. Edmunds, Honor.
E. J. C. Ellis, Benzonia.

BERRIEN—Branch No. 50

L. A. King, Baroda.
R. C. Allen, St. Joseph.

BRANCH—Branch No. 9

A. G. Holbrook, Coldwater.
W. A. Griffith, Coldwater.

CALHOUN—Branch No. 1

R. D. Sleight, Battle Creek.
W. H. Haughey, Battle Creek.

CASS—Branch No. 36

Edgar A. Planc, Union.
Wm. C. McCutcheon, Cassopolis.

CHARLEVOIX—Branch No. 37

(One delegate.)

CHEBOYGAN—Branch No. 58

Chas. B. Tweedale, Cheboygan.

CHIPPEWA—Branch No. 35

James J. Lyon, Sault Ste. Marie.
J. A. Ferguson, Rudyard.

CLINTON—Branch No. 39

M. Weller, St. Johns.
J. E. Taylor, Ovid.

DELTA—Branch No. 38

M. P. Fenelon, Escanaba.
A. L. Laing, Escanaba.

DICKINSON - IRON—Branch No. 56

(One delegate.)

EATON—Branch No. 10

W. H. Rand, Charlotte
A. H. Burleson, Olivet.

EMMET—Branch No. 41

J. H. Charters, Boyne City.
J. J. Reycraft, Petoskey.

GENESEE—Branch No. 24

A. J. McReynolds, Flint.
W. J. Wall, Avoca.
Henry Cook, Flint.
H. D. Knapp, Flint.

GOGEBIC—Branch No. 52

L. O. Houghten, Ironwood.
E. Madajesky, Bessemer.

GRAND TRAVERSE - LEELANAU—Branch No. 18

(One delegate.)

GRATIOT—Branch No. 25

W. M. Drake, Breckenridge.
L. A. Howe, Breckenridge.

HILLSDALE—Branch No. 3

T. H. E. Bell, Reading.
C. T. Bower, Hillsdale.

HOUGHTON—Branch No. 7

(One delegate.)

HURON—Branch No. 47

Sheldon B. Young, Caseville.
E. E. E. Yale, Pigeon.

INGHAM—Branch No. 40

B. M. Davey, Lansing.
Seth Jones, Lansing.

IONIA—Branch No. 16

J. J. McCann, Ionia.
E. W. Lytle, Belding.

ISABELLA - CLARE—Branch No. 54

C. M. Baskerville, Mt. Pleasant.
S. E. Gardiner, Mt. Pleasant.

JACKSON—Branch No. 27

Peter Hyndman, Jackson.
C. D. Munro, Jackson.

KALAMAZOO—Branch No. 64

G. F. Inch, Kalamazoo.
A. I. Noble, Kalamazoo.
C. H. McKain, Vicksburg.
H. Ostrander, Kalamazoo.
E. P. Wilbur, Kalamazoo.
W. F. Hoyt, Paw Paw.

KENT—Branch No. 49

N. M. Kassabian, Coopersville.
J. D. Brook, Grandville.
F. J. Lee, Grand Rapids.
Collins H. Johnston, Grand Rapids.

LAPEER—Branch No. 23

Peter Stewart, Hadley.
J. P. Eggleston, Imlay City.

LENAWEE—Branch No. 51

W. B. Sprague, Palmyra.
R. E. Eccles, Blissfield.

LIVINGSTON—Branch No. 6

R. H. Baird, Howell.
C. E. Skinner, Howell.

MACOMB—Branch No. 48

H. F. Taylor, Mt. Clemens.
E. G. Folsom, Mt. Clemens.

MANISTEE—Branch No. 19

James A. King, Manistee.
R. J. Kirkland, Manistee.

MARQUETTE - ALGER—Branch No. 28

A. W. Hornbogen, Marquette.
T. A. Felch, Ishpeming.

MASON—Branch No. 17

(One delegate.)

MECOSTA—Branch No. 8

George H. Lynch, Big Rapids.
A. A. Spoor, Big Rapids.

MENOMINEE—Branch No. 55

R. G. Marriner, Menominee.
Edward Sawbridge, Stephenson.

MIDLAND—Branch No. 43

(One delegate.)

MONROE—Branch No. 15

V. Sisung, Monroe.
W. F. Acker, Monroe.

MONTCALM—Branch No. 13

M. E. Danforth, Stanton.
F. A. Johnson, Greenville.

MUSKEGON - OCEANA—Branch No. 61

F. B. Marshall, Muskegon.
George S. Williams, Muskegon.

NEWAYGO—Branch No. 60

N. De Haas, Fremont.
Willis Geerlings, Reeman.

OAKLAND—Branch No. 5

George McKinnon, Oxford.
H. A. Sibley, Pontiac.

O. M. C. O. R. O.—Branch No. 11

C. C. Curnalia, Roscommon.
L. A. Harris, Gaylord.

ONTONAGON—Branch No. 66

(One delegate.)

OSCEOLA - LAKE—Branch No. 30

H. L. Foster, Reed City.
A. Holm, Leroy.

OTTAWA—Branch No. 32

(One delegate.)

PRESQUE ISLE—Branch No. 63

B. G. Larke, Rogers City.
W. W. Arscott, Rogers City.

SAGINAW—Branch No. 14

G. H. Ferguson, Saginaw.
D. E. Bagshaw, Saginaw.

SANILAC—Branch No. 20

James A. Fraser, Lexington.
James W. Scott, Sandusky.

SCHOOLCRAFT—Branch No. 57

Andrew Nelson, Manistique.
S. H. Rutledge, Manistique.

SHIAWASSEE—Branch No. 33

George P. Sackrider, Owosso.
A. M. Hume, Owosso.

ST. CLAIR—Branch No. 45

George S. Ney, Port Huron.
M. E. Vrooman, Port Huron.

ST. JOSEPH—Branch No. 29

J. H. Moe, Sturgis.
R. D. Runyan, Sturgis.

TRI-COUNTY—Branch No. 62

O. L. Ricker, Cadillac.
W. J. Smith, Cadillac.

TUSCOLA—Branch No. 44

H. A. Bishop, Millington.
H. S. Karr, Akron.

WASHTENAW—Branch No. 42

J. A. Wessinger, Ann Arbor.
John W. Keating, Ann Arbor.
Wm. Blair, Ann Arbor.
R. Bishop Canfield, Ann Arbor.

WAYNE—Branch No. 2

J. W. Vaughan, Detroit.
Guy L. Kiefer, Detroit.
Walter Ford, Detroit.
F. B. Walker, Detroit.
J. E. King, Detroit.
E. W. Haass, Detroit.
W. J. Wilson, Jr., Detroit.
J. Stanley Miner, Detroit.
A. N. Collins, Detroit.
Hugo A. Freund, Detroit.
A. D. Holmes, Detroit.
F. B. Robbins, Detroit.
Ray Connor, Detroit.
L. J. Hirschman, Detroit.
Angus McLean, Detroit.
Howard Loongyear, Detroit.
R. E. Jamieson, Detroit.
R. L. Clark, Detroit.
H. W. Hewett, Detroit.
C. G. Jennings, Detroit.

The JOURNAL
of the
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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Grand Rapids, Mich.

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All communications relative to exchanges, books for review, manuscripts, news, advertising and subscriptions are to be addressed to Frederick C. Warnshuis, M.D., 91 Monroe Ave., Grand Rapids, Mich.

The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications or advertisements.

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AUGUST

Editorials

CONTACT CASES OF TYPHOID FEVER

Our experience in Alpena has demonstrated that in an epidemic of typhoid fever in a city, insufficient attention is paid to cases that develop by contact. A study of forty-five cases of typhoid occurring in Alpena this spring, made by Dr. Guy L. Kiefer of Detroit, and myself, showed that of these forty-five, twenty-eight were definitely traced to contact, leaving seventeen where the source of contagion might have been due to a contaminated water-supply. These twenty-eight cases developed three, four, five and six cases in homes that were too poor to employ the services of a nurse and where the one caring for the sick was obliged to do the cooking for the other members of the family. In one family, where six cases developed, the woman attending the sick for a time milked the cow, cooked the meals and in other ways infected the members of the household.

Over one year ago our medical society realized the possibility of such cases developing by contact and had urged a strict quarantine and board of health disinfection of the excreta. Various reasons had prevented our putting our theories into effect until in April public sentiment had been aroused so that it was possible to begin an effective campaign of prevention. At that time cases were being reported daily and five deaths occurred in three weeks. You will understand that the hypochlorate method of water purification had been in effect for over two months under state board supervision, and for the most part the water, on analysis, was declared safe.

Two visiting nurses were employed to daily visit the homes, in which strict quarantine was enforced, prepare the disinfectant, give the patient a bath, and instruct the family in preventative measures. The cordial cooperation of the medical profession and an unlimited publicity in the papers, soon showed its effect, and after the first three weeks, during which twenty-one cases were reported, but one new case has been reported, and that clearly a contact case.

Cities with typhoid fever epidemics certainly should not neglect their water-supply, but the attention of the board of health should be centered, far more than is usually the case, on a strict isolation of the patient, a personal disinfection of the excreta, and an avoidance of contact cases, which, our experience shows, occurs in two out of every three cases.

Another method of prevention which we used in families in which typhoid fever was present, was typhoid vaccination. Over 100 persons were rendered immune to typhoid fever in this manner, in only two of whom did any symptoms of typhoid develop. In one of these cases (three cases having already developed in the family) the patient, on the first day following the injection, developed a fever which lasted seven days; the other patient, nine days following the second injection, developed a typhoid condition which lasted nine days. Both of these cases were apparently aborted typhoid, due to vaccination.

Again, let me reiterate: Cities with a typhoid epidemic should not await the improvement of the water-supply, but should vigorously attack the epidemic as they would one of diphtheria or small-pox, and the results will be fully as gratifying.

C. M. WILLIAMS.

FEE SCHEDULES. WORKMEN'S COMPENSATION LAW

The schedule of fees that has been observed by the various insurance companies in settling claims of physicians and surgeons for services

rendered to injured employees under the so-called Workmen's Compensation Law, is very just. The law has worked an immense benefit to the medical men of the state for the reason that it requires the payment of three weeks' medical care in every case in which an employee receives an injury. When the services are completed and the statement is rendered, the voucher is promptly forthcoming. In former days the employee was ofttimes inveigled by a lawyer to sue his employer for personal damages, with the result that the employer immediately repudiated any claims for professional services and the doctor was usually compelled to charge the account off as uncollectable. The new law has provided for the physicians and they now promptly receive their monetary returns for the services they render.

In order that this satisfactory arrangement may be continued, it is essential that the physicians should observe the schedule of fees in making their charges for their service. Complaints are already being filed with the Industrial Accident Board in Lansing that the amount of money paid to the physicians in the state exceeds that of the amount paid to the injured employee. So persistent are these complaints and so frequently is the physician's exhorbitant fees called to the attention of the Board that its members are already seriously considering the advisability of adopting a schedule of fees, covering the services of physicians in Michigan.

This schedule arbitrarily forced on us would necessarily be followed unwillingly and would in addition be a sad blow at the dignity of the medical profession. It therefore behooves us to see that the profession as a whole conduct itself with absolute fairness in carrying out its part of the law, and, if necessary, anticipate the action of the Industrial Accident Board by the adoption of its own schedule of fees, either at a special meeting of those physicians most interested in this line of work or at the next regular meeting of the State Society.

The law was intended for the benefit of the employee and not for the physician. While the physician has incidentally reaped a benefit from this enactment, his future course should be such that Michigan be not compelled to submit to the reduction of the fee schedule, as was done in Massachusetts. It was found in Massachusetts that the physician was abusing his privilege and that too much money was being paid out for medical attention in proportion to the amount paid the workmen for compensation, so that the Governor forced the adoption of a new and lower schedule of fees. In Michigan the same thing is becoming apparent and may be obviated if the physician does not "farm" these cases, and will adhere at all times to the schedule that is now in force and not double the amount of his bill just because he thinks this is easy and "quick pay" work done for employers that are rolling in wealth. It will be to the physician's personal interest to give this matter a little thought and be guided by the foregoing suggestions and not charge $50 for a case where otherwise he would charge but $25.

THE FLINT NUMBER

This issue of THE JOURNAL is known as the Flint number and its pages are largely devoted to a writeup of that city and to our annual meeting. We have endeavored to place before the reader a word picture of the civic, business, professional and communal life of Flint. We have tried to explain "Why is Flint" and trust that the descriptive articles and illustrations will not only enlighten the reader, but will also stimulate him to desire to see Flint and its environments and resources in person. Secondly, this issue contains the advance announcement and outlines of the papers that are to be read before the various sections. The social features and the full list of invited guests of national repute will be published in the September issue, which will be mailed August 25.

Peruse this issue from cover to cover—don't overlook the advertisements—and after doing so we feel certain that you will feel impelled to arrange your work so as to attend this annual meeting. You cannot afford to miss it. The profession of Flint is waiting to welcome and entertain you.

COUNTY SECRETARIES' MEETING

We desire to call the attention of every county secretary to the Fifth Annual Meeting of the County Secretaries' Association of Michigan. This meeting will be held in the parlors of the Hotel Dresden in Flint on Wednesday afternoon, September 3, at 3 o'clock. Elsewhere in this issue you will find the program of addresses and speakers. On the conclusion of the program the meeting will adjourn to the banquet room, where the Council will tender a dinner to the secretaries in attendance.

We urge that every county secretary attend this meeting and trust that the officers and members of the various component societies will insist that their secretary shall be present. Come

and talk over your difficulties. Meet and become acquainted with the other secretaries and ascertain how they are conducting the work of their office in their county. By so doing you will secure new ideas and a new impetus that will enable you to attain greater ends and accomplish greater things, and thus build up your own society so that it will be of more value to your members and a potent power in the professional life of your community.

Your councilor and your society expects that you will attend this meeting, and we trust that the entire Council will have the pleasure of meeting you, and that this conference will result in the instituting of a movement that will advance the every interest of our state organization.

SHALL I ATTEND THE ANNUAL MEETING AT FLINT?

We sincerely hope that everyone of our readers are asking themselves this question. We are going to endeavor to cite but a few reasons that are pertinent why every member should answer the above question in the affirmative.

The demands that are made on the time of the average physician are so great that he has but little time in which he may devote himself to keeping abreast of the progress that is being daily made in the profession. New ideas and new methods are constantly being advanced. To become conversant with them so as to apply their teachings requires study, thought, experience and application. Every physician has not the opportunity of conducting such an investigation and he is loath, without such research and experience, to adopt these new methods. At the scientific meetings of the various sections these methods are the basis of many of the papers that are read by men who have the proper facilities and the assistants to critically investigate and report on their experience with these newer methods. The discussion that attends the reading of these papers clears up the difficulties and points of contention and technic of application so that the listener is enabled to obtain a clear idea and a practical working basis for their application in his practice. Becoming thus the possessor of a working knowledge of these new and tried modern methods he will go home better equipped to cope with the problems of his practice. The educational features of the meeting are, then, the first reason why you should attend the Flint meeting.

The lonely worker in any calling is prone to become narrow and fall into a rut of habit. The mingling with fellow practitioners from other localities, the listennig to papers and discussions by men who are devoting their lives in the endeavor to solve many of the unexplained problems of our work acts as an inspiration that will tend to keep us out of the rut and will stimulate us to do better and more scientific work and adopt new and tried advanced measures, to the one great end that we become better doctors. One cannot attend an annual meeting without such a commendable impetus. You can cause this yoke of habit to fall from your shoulders and remain abreast of the times if you but devote a few days during each year to attending the meeting of the State Medical Society, and better still, in addition a few of the national meetings. You will return home better fortified to do greater scientific work.

By attending the state meeting you will meet many of your old classmates and friends and around the social board and at the entertainments you will have the opportunity of living over and recalling the days of yore when you were at college. These renewed recollections of college days and the recitation of long past episodes will cause the mantle of fatigue to be lifted from your shoulders; the friendly handclasp and the "Hello Bill" will stimulate your vasomotors to such an extent that the drooping shoulder will become erect, the wrinkles of care will vanish and a feeling of contentment and peace will permeate your whole physique. You will feel revivified and still retain your professional dignity. In addition, you will make new acquaintances whose friendship you will prize.

To summarize: You will gain much useful knowledge that will be a valuable asset in your work; you will secure a renewed impetus that will cause you to do better work; you will renew old acquaintances and form new ones; you will return home a better doctor and man than you were when you left home.

Let your answer be: Yes, I will attend the annual meeting at Flint, and plan your work accordingly. We will look for you at Flint on September 4 and 5.

Editorial Comments

ARE you planning to attend the Annual Meeting at Flint? If not, why not? There are many good things awaiting those who attend.

DR. WILLIAMS' article in this number on typhoid contact is to the point and very timely.

He presents a subject that is worthy of consideration by every doctor and health officer.

IF the clinical case reports published in the July number proved interesting and met your approval, will you not favor us with similar reports from your practice? We shall always be pleased to receive such reports and supply half tones for illustrations.

COUNTY secretaries who have failed to send in the names of the duly authorized delegates from their society are urged to do so at once in order that proper credentials may be mailed to all the elected delegates and that they may be properly seated in the House of Delegates at its first session.

OUR advertisers merit your patronage. Have you perused our advertising pages and consigned some of your business during the past month to these advertisers? If not you are not exhibiting to your society and its publication the loyalty and support that it rightfully demands. May we not urge that you bear this in mind in the future? It will be to your personal advantage.

THE American Medical Association went on record at its Minneapolis meeting as strongly opposed to the secret division of fees or the so-called "Surgeon's commission evil." An amendment was adopted providing that any person guilty of this practice be considered ineligible for membership and should he be a member he is to be peremptorily expelled. Slowly but surely is this blot being removed from the midst of our organized profession.

ONE of the daily papers in the state has been secretly investigating the methods of a certain chiropractic college of the state and promises to publish, in the very near future, some interesting disclosures. THE JOURNAL has asked for this evidence, but naturally the editor does not wish to grant us the privilege of printing the *exposé* until it has appeared in the columns of his daily. We hope to secure the material for an early number and promise some interesting reading.

THE newly enacted amendments to the Medical Practice Act should not be permitted to merely occupy a certain number of pages on the statute books. The amendments, if enforced, will create a much-needed reform. It is up to the individual member to place whatever evidence may come into his possession in the hands of the proper committee of his Society. By so doing, we will eventually raise the standard of the profession of the state to the highest efficiency.

WE suggest that if you have not already done so, that you at once engage your hotel or room accommodations for the Flint meeting. By so doing you will avoid personal inconveniences and will also enable the local entertainment committee to arrange for the care and comfort of all. Do not go without having made a reservation and thus be compelled on your arrival to spend a half a day in endeavoring to secure accommodations. Sit down and write to the chairman of the committee on arrangements stating the nature of the reservations that you wish to make and he will be only too glad to comply with your wishes. A list of the hotels is published in this issue.

WE hope soon to commence publishing a series of original articles by the leading clinicians and surgeons of this country. We have written to these leaders of the profession in America and they have, in the majority of instances, consented to send us an article on some practical subject of their specialty. This series, we trust, will enlighten the members profitably as to the viewpoints and opinions of these various masters and teachers. To enable the reader to perceive the character of these articles we will mention but a few of their names: Bainbridge, Crile, Matas, Dock, Mayo, Barrett, Cullen, Porter, McCaskey, Cushing, Janeway, Knott, Binnie, Billings, Babcock, Murphy, Bevan, Barker, McCarthy, Smithies and several others. The first paper of the series will be published either in the September or October issue.

WE are very anxious to have THE JOURNAL contain original articles of high scientific value and also of practical value. Articles that will be of interest to every member, be he specialist, surgeon, physician, reseach worker or a lonely practitioner at some four corners. To the end that THE JOURNAL may contain such articles we are soliciting papers from among our members and particularly urge the men in the smaller communities to send us original articles bearing on the problems of their every-day work and practice. We admit that we have been publishing a large number of surgical papers. The fact

that they have predominated is not due to our surgical tendencies. They have been published because they were the only papers that have been submitted to the editorial desk. Original articles on medical subjects are desired and solicited. We trust that our internal medicine members will favor us with their writings.

IF every member would devote but one hour a month in doing something for his Society's advancement and interest, it would be but a comparatively short time before Michigan would be the leader in medical organization work. Think of it! Twenty-three hundred hours of effort devoted by our members each month! Practically one hundred days full of work! What might not be accomplished? A thoroughly organized profession composed of every reputable and eligible physician in the state: live, active county societies holding interesting and instructive meetings for each member's intellectual and social profit; a universal feeling of good fellowship and friendliness; potent factors in moulding public opinion in all matters of public health and civic problems. These are but a few of the possibilities and ends thus attainable. This is not a "pipe-dream," but a conservative statement of what concerted action would accomplish.

Are you dissatisfied with your local organization and the benefit you are deriving from it? If so, stop and ask yourself what you are personally doing for it. What are you giving it?

Are you dissatisfied with the programs? What are you doing to make them better? How many papers have you read? How many cases have you reported? In how many discussions have you participated? Are you dissatisfied with the attendance? What are you doing toward increasing it? Are you urging the non-member to unite and reminding "Dr. Often-Absent" that he should attend?

Pertinent questions—yes, but vital ones that you have the power of solving. The gist of the whole matter may be summed up: Do not leave all the work to your officers. Do not forget your society when the meeting adjourns and not recall its existence until you receive the next notice of a meeting.

You are going to get out of your Society just what you put into it. This is a day of organized effort. The opportunity presents. Are you ready to grasp it?

State News Notes

The hospitals of Grand Rapids secured $3,846 on Hospital Tag Day last month.

Dr. J. W. Evers of Flint is spending three months doing post-graduate work in Ann Arbor.

Dr. Ward Thomas Seeley was married in Ann Arbor on June 11 to Miss Marion Madeline Dickinson.

Dr. George Washington Krahn was married to Miss Clara Rohn at the latter's home in Ypsilanti on June 3.

Tag Day for the benefit of the Detroit Maternity Hospital provided that institution with a sum of $4,020.

Dr. N. A. Repp of Detroit was operated on for appendicitis in St. Mary's Hospital on June 19. He experienced a rapid convalescence.

Dr. Floyd Gillis of Mitchell, S. D., was married to Miss Helen Crane of Detroit on June 12. Dr. Gillis graduated from the U. of M. with the class of 1910.

Dr. Guy L. Kiefer, who retired as Health Officer of Detroit on July 1, was tendered a banquet on that day by eighty employees of the Board of Health of that city.

Dr. William Northrup of Grand Rapids sailed for London and Edinburgh on July 18. The doctor will devote the next six months to post-graduate work in the clinics of these two cities.

There are certain advertisements in this issue which each reader should not miss reading and patronizing. The future of THE JOURNAL is in a large measure dependent on the patronage conferred on its advertisers.

Dr. William H. Pierce, Detroit, has been appointed acting fleet surgeon at the Interlake Sailing and Power Boat Regatta at Put-in-Bay, to serve in place of the regular surgeon, Dr. C. G. Jennings, who found it impossible to devote the time to the duties of that office.

Dr. George R. Pray of Jackson has tendered his resignation as prison physician to the board of control. Dr. Pray has served the prison in this official capacity for the past ten years. His resignation was to take effect July 1 and in the future the doctor will devote himself to private practice in Jackson.

The charge that the prists and sisters of St. Mary's Hospital, Detroit, were "proselyting" was not substantiated at an investigation held by the Board of Poor Commissioners. The charge was preferred by several Protestant ministers and the board ruled that the accusing evidence was untrustworthy.

The following Flint physicians are spending three months in Europe doing post-graduate work:

T. S. Conover, eye, ear, nose and throat.
J. W. Orr, eye, ear, nose and throat.
H. A. Stewart, genito-urinary diseases.
David Jickling, children's diseases.
J. C. McGregor, heart and lungs.

Dr. William H. Price, head of Detroit's milk inspection since 1900, has been appointed Health Officer of Detroit to succeed Dr. Guy L. Kiefer, who resigned last month.

Drs. J. H. Dempster, J. E. Davis and B. R. Hoyt of Detroit are pursuing the summer courses offered by the medical department of the University of Michigan.

Two of the quarter page advertisements in this issue's advertising section were secured by Dr. C. P. Clark of Flint. They should be read and patronized by our members. The Flint business industries are ably assisting the Flint members of the Society in their work of perfecting arrangements and they are thus worthy of our members' consideration during their visit to Flint on September 3 and 4.

The *Illinois Medical Journal* appears in new form on its commencement of a new volume. It is of the same form and style as our JOURNAL and was adopted in conformity with the movement to secure a uniform style in all medical journals. Dr. Henry G. Ohls of Chicago is the managing editor. Dr. W. H. Gilmore of Mt. Vernon succeeds Dr. E. W. Weis as secretary of the Illinois State Medical Society.

Alpena, Tuscola County, Washtenaw County, Rose City, Oakland County, Osceola County and Arenac County have all tendered what are considered suitable sites for the proposed epileptic farm colony. The commission appointed by Governor Ferris to select a suitable site have expressed their determination not to consider any site in which there would be involved a land investment of over $75,000. At least 1,000 acres in a single tract is desired. The recent Legislature appropriated $200,000 for the purchase of a site and the erection of suitable buildings.

During the seven months during which the Speakers' Bureau of the American Medical Association was in operation (Nov. 1, 1912, to June 1, 1913) the following addresses have been given in Michigan by the various speakers sent out by this bureau:

Ann Arbor, Nov. 26, 1912.....Dr J. N. Hurty
Ann Arbor, Dec. 16, 1912.....Dr F. F. Wesbrook
Ann Arbor, Jan. 20, 1913.....Dr. John B. Murphy
Ann Arbor, April 9,.1913.....Dr. Ludwig Hektoen
Grayling, Jan. 15, 1913.....Dr. Guy L. Kiefer
Cadillac, Dec. 3, 1912.....Dr. J. W. Pettit
Cadillac, Dec. 17, 1912.....Dr. A. J. Cramp
Albion, March 18, 1913.....Dr. Miles F. Porter
Manistique, March 14, 1913.....Dr. Guy L. Kiefer
Ann Arbor, Feb. 19, 1913.....Dr. Abraham Jacobi
Kalamazoo, Jan. 28, 1913.....Dr. Evans
Mendon, Feb. 3, 1913.....Dr. M. F. Porter
Benton Harbor, Feb. 11, 1913.....Dr. W. S. Hall
Coloma, Feb. 24, 1913.....Dr. A. F. Fischer
Cadillac, April 7, 1913.....Dr. Guy L. Kiefer

Representatives of Harper Hospital Board of Trustees and staff departed for Toronto July 8 in a special car to inspect the new Toronto General Hospital. Five hundred thousand dollars is being spent in additions and improvements at Harper Hospital, and the heads of the institution hope to gain many new ideas in Toronto. The doctors of this party were: Drs. C. G. Jennings, H. W. Longyear, Max Ballin, Don M. Campbell, P. M. Hickey, E. W. Haass, B. R. Schenck, L. J. Hirschman, F. F. Morse, W. R. Chittick and Stewart Hamilton.

Deaths

Sellards, George B., M.D. Detroit College of Medicine, 1907. Member Lenawee County Medical Society, Michigan State Medical Society and American Medical Association. Died June 13, 1913, of heart trouble at his home in Deerfield, Mich., at the age of 38.

Martin, James, M.D. For many years head of the section on Diseases of Women and Children, Medical Department, University of Michigan, holding the first Bates' professorship of the Diseases of Women and Children. Died June 10, 1913, at San Diego, Cal.

Fletcher, John, M.D. Michigan College of Medicine and Surgery, Detroit, 1897. Member of Kalamazoo Academy of Medicine, Michigan State Medical Society, and American Medical Association. Died at his home, 529 South Park street, Kalamazoo, Mich., June 23, 1913, aged 61, following an illness of several months' duration.

Society Proceedings

DETROIT OTOLARYNGOLOGICAL SOCIETY

May 20, 1913

The society passed resolutions on the death of its member and its first president, Dr. E. L. Shurly, whose work and personality are well known. Dr. Shurly had shown a great interest in the society, for the scientific as well as the social side of the same.

Dr Stanley G. Miner spoke on septal deflections and emphasized the point that one style of operation will not do for all kinds of cases. He supported his idea by his experience in over four hundred cases. A general discussion followed.

Dr. J. Vernon White was elected president for the coming year; Dr. Emil Amberg was reelected secretary.

EMIL AMBERG, Secretary.

KALAMAZOO ACADEMY OF MEDICINE

The regular meeting of the Kalamazoo Academy of Medicine was held in the academy rooms in the public library, June 24, 1913, at 1:30 p. m.

Reports of the section meetings of the American Medical Association were given by members who had attended the Minneapolis session, among whom were Drs. Boys, Crane, Shillito, Adams and Jackson of Kalamazoo, and Crosby of Plainwell.

A paper on "Bone Pathology, with Biologic References," and illustrated by x-ray plates, was given by Dr. Henry J. Vandenberg of Grand Rapids, Dr. A. S. Youngs leading the discussion which followed.

"Protozoa in Pathology, with Demonstrations of Living and Stained Viruses," was the title of a paper presented by Dr. W. A. Perkins of Kalamazoo.

C. B. FULKERSON, M.D., Secretary.

THE A. M. A. COMMITTEE FOR PUBLIC HEALTH EDUCATION AMONG WOMEN, COOPERATING WITH THE KALAMAZOO ACADEMY OF MEDICINE COMMITTEE

The American Medical Association Committee for Public Health Education Among Women, cooperating with the Kalamazoo Academy of Medicine Committee have held a series of meetings in Kalamazoo. Dr. Alice Barker Ellsworth gave a talk at four gatherings —Western State Normal, Kalamazoo College, Parson's Business College and the Y. W. C. A.—on the "Anatomy and Physiology of the Pelvis"; three talks—Kalamazoo College, Y. W. C. A. and Parson's Business College—on the "Physiology of Menstruation"; four addresses—Parson's Business College, Baptist Women's Union, Equal Suffrage League and Kalamazoo College —on "Social Hygiene"; spoke to the Kalamazoo College on the subject of "Motherhood"; two meetings—Portage Ladies' Club and Lake View Club—on the topic, "The Air We Breathe."

Dr. Della P. Pierce presented the subject of "The Great White Plague," at a meeting of the Galesburg M. I. Club; she also addressed the Ladies' Aid at the Portage Street Church and the Church of Christ on "Sex Education," and spoke on the topic, "Some Essentials of Education," at the Kalamazoo College.

Dr. F. Elizabeth Barrett spoke on the "Infant Welfare Movement" at the Mother's Club, and Dr. Rose Patterson Warren addressed the Babtist Women's Club and the East Side W. C. T. U. on "First Aid."

Dr. C. E. Boys gave a series of talks at the Y. M. C. A. and the Kalamazoo College on "First Aid" and "Tumors." Dr. Boys also gave an illustrated stereopticon address at the Galesburg M. E. Church on "Tuberculosis."

Prof. W. E. Praeger of Kalamazoo College gave a talk on "Eugenics" at the Galesburg M. E. Church.

Dr. Clara M. Davis of Lansing spoke at the Ladies' Library Association on "A Health Program for Immediate Use," and gave a "Health Talk" at the Y. W. C. A.

Dr. W. A. Evans of Chicago addressed a public meeting at the First Baptist Church to an audience that was estimated at three hundred and fifty, on the subject of "What Kalamazoo Can Do."

A public meeting in the First M. E. Church was addressed by Dean Vaughan of the University of Michigan, on "Eugenics or Race Betterment." The attendance was 800, with some turned away for lack of room. This was by far the best gathering under the auspices of the joint committee and indicated the increased work in the work of the committee.

There were also eight meetings held in the rooms of the Kalamazoo Academy of Medicine that were open to the public, making a total of forty-three meetings with an attendance of over 4,300.

DELLA PIERCE, Chairman.

GENESSEE COUNTY

The regular June meeting of the Genessee County Medical Society was held in the Masonic Temple at Flint, June 10, at 8 p. m. Dr. Victor C. Vaughan, Jr., of Detroit, gave an interesting talk on "The Early Diagnosis of Pulmonary Tuberculosis." The doctor placed more confidence in the ophthalmic reaction for diagnostic purposes than the other tuberculin tests, placing stress on the sensitization test, which is made from one week to ten days following the first test. A mild positive result at this time means that the patient has been tuberculous, but is not at present actively tuberculous.

Dr. Vaughan was given a vote of thanks and elected to honorary membership in the Genessee County Medical Society.

On suggestion of Dr. Don Knapp, Health Officer, a motion was made and adopted:

"That the Genessee County Medical Society request the Common Council of Flint to grant the Health Department a nurse to act under the instruction of the Board of Health in instructing tuberculous patients and mothers in the care of sick children."

The Council approved of this request.

C. P. CLARK, M.D., Secretary.

HILLSDALE COUNTY

The members of the Hillsdale County Medical Society held their regular monthly meeting at Bird Lake, south of Pittsford, June 20, 1913, this being the first of the monthly meetings inaugurated by the society to be held outside of the city.

Papers were presented by Dr. Bion Whelan of Hillsdale and Dr. D. W. Fenton of Reading.

Following the program the afternoon was spent in fishing.

C. T. BOWER, M.D., Secretary.

HOUGHTON COUNTY

The regular monthly meeting of the Houghton County Medical Society was held at the Scott Hotel, Hancock, Monday evening, June 2, 1913. Papers were read by Dr. W. E. McNamara of Trimountain and Dr. R. E. Wiley of Osceola.

This meeting was also a farewell session, a banquet being given in honor of Dr. McNamara, who will leave soon to locate at Lansing. For the past five years Dr. McNamara has been mine physician at Trimountain and house physician at the Copper Range Hospital.

ALFRED LA BINE, M.D., Secretary.

IONIA-MONTCALM COUNTIES

A day of recreation and enjoyment to all was July 17, 1913, when the doctors, druggists and dentists of Ionia and Montcalm Counties held their annual picnic at Baldwin Lake, Greenville. There were no speeches or toasts to call forth any mental effort, sociability and games having the right of way in making this a red-letter day for these professional and business men of the two counties. While the men of Ionia County played a ball game with the Montcalm men for opponents, the women of the two counties were likewise

arrayed against each other in a similar game. At 12:30 well-filled lunch baskets were opened and a bountiful lunch enjoyed. Bathing, boating and other athletics were participated in, and all in all it was an occasion of relaxation and sociability to all in attendance.

JOHN J MCCANN, M.D., Secretary, Ionia.
H. L. BOWER, M.D., Secretary, Montcalm.

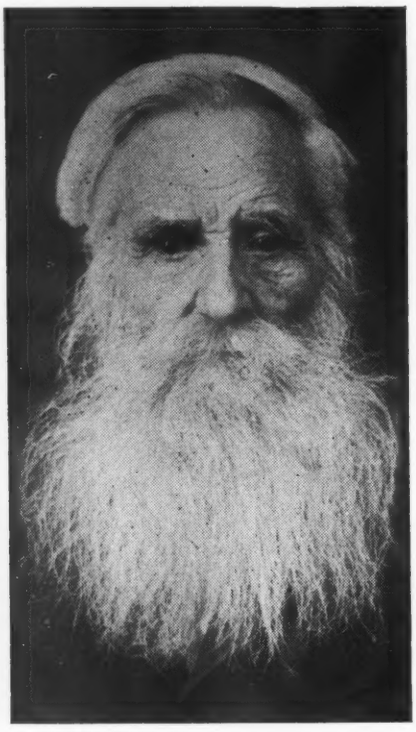
LAPEER COUNTY

The members of the Lapeer County Medical Society devoted its July meeting to a picnic given in honor of Dr. J. S. Caulkins, the pioneer practitioner of Lapeer county. Forty-two members and their wives gathered at Lake Pleasant on July 8. After partaking of a bountiful dinner the following program was carried out:

Presentation Address, Dr. G. W. Jones.

Toast: "Dr. Caulkins, Student and Scholar," Dr. H. E. Randall.

Toast: "Some Salient Characteristics of Dr. Caulkins," Dr. Wm. Blake.



Dr. J. S. Caulkins

Toast: "Dr. Caulkins, Family Physician and Friend," Dr. W. J. Kay.

Toast: "Live Men Must Go On Working; It Is Only the Dead Who Rest," Rev. S. G. Livingstone.

Informal Talk: Dr. F. C. Warnshuis, Secretary Michigan State Medical Society.

Dr. John Sistair Caulkins was born in 1822 and his early boyhood was spent in Genesco, Livingston county, New York. In 1845 he moved to Michigan, where he studied medicine with Dr. Strowbridge of Almont and received his state license.

Dr. Caulkins began his practice at Thornville in 1846 and continued in practice there until 1898, marrying in 1849. During all these years the doctor has made numberless friends who feel it a privilege to be allowed to pay him a tribute.

DANIEL J. O'BRIEN, Secretary.

MUSKEGON-OCEANA COUNTY

The last several meetings of the Muskegon-Oceana County Medical Society have been held in various towns in the two counties. This gives the country members a better chance to attend the meetings and as the trips are usually made by automobile, this gives an added attraction. We expect to carry out this plan during the summer months.

The meeting of May 9 was held at the White Lake Inn at Montague, as was also the meeting of the 17th. On June 27 the meeting was held at the Shelby hotel, Shelby.

J. T. CRAMER, Secretary.

UPPER PENINSULA MEDICAL SOCIETY

Program of Annual Meeting

The nineteenth annual meeting of the Upper Peninsula Medical Society will be held in the city of Ishpeming under the auspices of the Marquette-Alger County Medical Society, August 6 and 7, 1913.

This organization is unique in the history of medical societies. We have no constitution; we have no by-laws; we exact no dues for membership. The president is chosen from the county society which last entertained the Upper Peninsula Society. Any member of a county society in the Upper Peninsula is a member of the Upper Peninsula Society. Only members of the Upper Peninsula Society can present papers at these meetings.

The following program is tentatively outlined:

WEDNESDAY MORNING, AUGUST 6, 10:30 A. M.

Introduction—Dr. F. M. Harkin, Marquette.

Invocation—Rev. Ziegler, Ishpeming.

Address of Welcome—George Barrett, Mayor, Ishpeming.

President's Address—Edward Sawbridge, Stephenson.

WEDNESDAY AFTERNOON, 1:30 P. M.

America's Contribution to Gynecology—E. T. Abrams, Dollar Bay.

Care and Management of Acute Lobar Pneumonia—R. Bennie, Sault Ste. Marie.

Extrauterine Pregnancy, Diagnosis and Treatment—E. H. Flynn, Marquette.

Public Health—C. J. Larson, Negaunee.

Pleurisy as Considered by the General Practitioner—W. S. Picotte, Ishpeming.

Tri-Facial Neuralgia—H. M. Cunningham, Marquette.

WEDNESDAY EVENING, 8 P. M.

Banquet tendered to the visitors by the Marquette-Alger Society.

THURSDAY MORNING, AUGUST 7, 9:30 A. M.

Business meeting and election of officers.

Ileus—A. I. Laubaugh, Calumet.

Syphilis, with Demonstration by Stereopticon Slides.—Arthur T. Fischer, Hancock.

Modern Treatment of Syphilis—P. D. McNaughton, Calumet.

The Diagnosis of Eye, Ear, Nose and Throat Diseases of Interest to the General Practitioner—C. R. Ellwood, Negaunee.

Relation of Gall-Stones to Pregnancy, with Report of Case—R. A. Burke, Diorite.

Paper—Title to be given—G. M. Belheumer, Negaunee.

THURSDAY AFTERNOON

By special invitation the members of the society will be entertained at the Morgan Heights Tuberculosis Sanitarium and the Upper Peninsula Branch Prison; automobile drives to parts of interest and around Presque Isle.

H. J. HORNBOGEN, M.D., Secretary.

Public Health

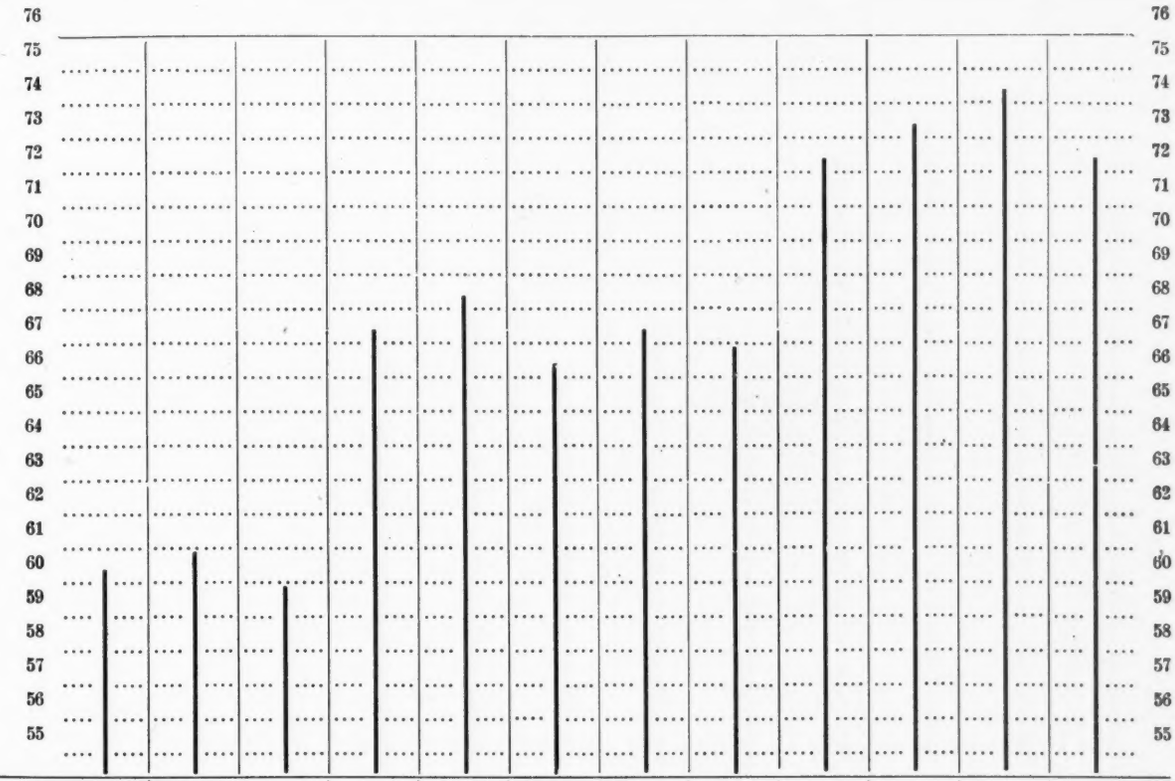
THE INCIDENCE OF CANCER AS INDICATED BY MICHIGAN VITAL STATISTICS

An article on the subject of cancer, under a caption "Public Health," may occur to some readers as a little beside the question. The same might have been said regarding tuberculosis only a relatively few years ago. It is not my contention that cancer is a disease subject to regulations by boards of health, nor do I prophesy that the disease will ever come to be considered by health authorities as preventable by sanitary principles or by the application of methods commonly used in the prevention of the communicable, infectious diseases, since there is no dependable evidence that cancer is infectious or communicable as we now use those terms.

Cancer has come to be such a great factor among the causes of death that it deserves some consideration from a statistical standpoint at least. Just as "popular knowledge about the communicable diseases" constitutes the most potent factor in their prevention, so, I believe, there must be a greater popular knowledge regarding the malignant growths before great success by presently known methods of prevention of development can be attained. If, as we generally believe, very early surgical operation would prevent many deaths from cancer, then the public must be educated to the points of early consultation with a competent physician and of early surgical action.

The fact that in every instance it has been the case that a knowledge of the greatness of the

TABLE I.—DIAGRAM SHOWING THE DEATH RATES PER 100,000 POPULATION FROM CANCER, IN MICHIGAN, DURING THE YEARS 1900-1911, INCLUSIVE.



Years....	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Rates....	60.3	60.5	59.9	67.7	68.3	66.2	67.2	66.9	72.8	73.1	74.9	72.4

TABLE II.—TABLE SHOWING THE PER CENT OF DEATHS TO TOTAL DEATHS DUE TO CANCER OF EACH SEX OVER 20 YEARS OF AGE, IN THE VARIOUS ORGANS OF THE BODY, AS INDICATED BY THE TOTAL FOR THE TWO FIVE-YEAR PERIODS, 1901-1905 AND 1906-1910.

Location of Disease	1901-1905				1906-1910			
	Males		Females		Males		Females	
	Number of Deaths	Per cent of Total	Number of Deaths	Per cent of Total	Number of Deaths	Per cent of Total	Number of Deaths	Per cent of Total
Mouth	197	5.9	52	1.1	263	6.8	63	1.2
Stomach and liver	1,742	52.3	1,603	34.6	2,004	52.0	1,863	34.0
Intestines	337	10.1	425	9.2	459	11.9	560	10.1
Genital organs	13	0.4	1,098	23.7	9	0.2	1,320	24.1
Breast	17	0.5	680	12 5	4	0.1	790	14.4
Skin	282	8.5	109	2.4	312	8.1	140	2.6
Other organs	741	22.3	664	14.3	803	20.8	746	13.6
Total	3,329	100.0	4,631	100.0	3,854	100.0	5,482	100.0

TABLE III.—RATIO OF TOTAL DEATHS (EXCLUSIVE OF CANCER) TO DEATHS FROM CANCER, AS INDICATED BY THE AVERAGE DEATHS DURING THE TWO FIVE-YEAR PERIODS, 1901-1905 AND 1906-1910.

Age periods	Total deaths to one from cancer					
	Average, 1901-1905			Average, 1906-1910		
	All persons	Males	Females	All persons	Males	Females
20-24	148	111	209	125	151	106
25-29	75	100	61	75	74	76
30-34	32	54	24	36	58	26
35-39	19	32	13	16	28	11
40-44	10	19	7	11	27	7
45-49	8	14	5	8	14	5
50-54	7	11	4	7	12	4
55-59	7	9	5	6	10	4
60-64	7	10	6	7	8	6
65-69	9	11	8	9	10	7
70-74	12	13	11	11	13	10
75-79	18	20	16	16	18	13
80 and over	29	29	28	29	31	27

TABLE IV.—TABLE SHOWING THE DEATH RATES FROM CANCER PER 100,000 OF THOSE LIVING AT EACH AGE BY SEX, IN MICHIGAN, FOR EACH OF THE YEARS, 1901-1910

YEARS	AGE GROUPS AND DEATH RATES																							
	20-24 years		25-29 years		30-34 years		35-39 years		40-44 years		45-49 years		50-54 years		55-59 years		60-64 years		65-69 years		70-74 years		75-79 years		80 and over	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1901	7.1	4.5	6.8	9.2	9.7	30.0	21.6	63.2	44.4	106.7	62.5	135.9	99 6	202.2	164.6	249.8	229.7	320.7	344.5	448.5	414.0	560.6	466.3	541.6	727.7	379.7
1902	1.8	3.5	7.8	8.0	6.5	30.8	14 8	41.4	42.7	124.0	58.1	173.9	94.5	178.9	191.8	258.2	222.4	347.6	404.7	413.8	390.2	419.0	387.3	449.1	610.6	734.8
1903	2.6	2.6	5.8	15.7	10.7	22.6	26.0	62.0	45.1	100.0	76.8	164.8	120.0	248.8	161.9	376.9	242.2	401.5	332 8	457.9	552.8	428.3	512.3	582.3	652.2	626.2
1904	10.5	0.9	3.8	11.6	17.2	30.2	15.8	42.9	30.0	97.5	73.8	190.0	111.4	221.2	185.3	273.2	276.1	362.6	407.6	484.9	541.5	553.3	601.4	588.9	610.8	688.3
1905	3.5	2 5	4.8	6.7	8.6	23.2	21 3	53.4	34.9	89.5	47.8	158.9	103.1	238.3	181.2	313.8	224.3	333.9	326.5	503.4	512.1	622.4	563.1	740.8	616.5	772.6
Average, 1901-1905	5.1	2.8	5.8	10.2	10.5	27.3	19.9	52.6	39.4	103.4	63.7	165.0	105.8	218.3	177.2	294.4	239.2	353.5	363.1	462.3	484.4	518.3	506.7	582.2	642.3	643.3
1906	6.0	5.0	8.6	7.5	10.7	26.3	14.5	66.0	27 3	99.4	61.5	167.7	119 2	217.4	172.9	287.7	278.5	359.9	358 3	483.8	488.9	583 3	385.8	738.4	556.5	633.8
1907	1.7	9.1	9.4	5.6	7.5	26.0	16.7	57.0	24.8	110.4	59.1	144.4	106.2	250.6	197.5	357.9	287.9	311.9	375.6	501.6	382.4	450.3	460.0	745.2	552.7	715.6
1908	5 1	4.9	6.6	6.4	11.7	32.2	31.0	58.8	37.1	109.2	70.8	166.4	98.4	259.2	181.2	331.9	253.4	431.1	385.8	522.6	420.0	555.8	834.2	688.4	642.3	653.8
1909	3.4	4.8	4.7	9.9	14.9	22.3	28.6	67.4	24.6	84.3	60.6	152.8	116.9	242.5	179.3	322.4	311.9	376.3	473.7	539.3	468 5	574.3	632.2	865.4	535.3	697.5
1910	2.9	2.3	9 5	7.9	9.1	12.9	26 0	53.8	31.4	95.5	79.7	185.3	90.9	228.6	188.5	355.5	326.3	368.6	442.9	404.8	540 0	674.2	757 6	700.8	691.3	697.0
Average, 1906-1910	3.8	5.0	7.8	7.5	10.7	23.8	23.4	60.5	29.1	99.6	66.5	163.5	105.3	239.5	184.0	331.6	291.9	370.0	409.0	488.2	460.0	567.7	603.1	746.5	596.0	680.2

NOTE.—M, males; F, females.

proposition must precede any concerted action, is, therefore, my apology for presenting this article. The word "cancer" is used in its broad sense as including all classes of neoplasms. The data expressed in the tables are based on the death certificates on file in the Secretary of State Department at Lansing. The tables are intended to be self-explanatory, and are, therefore, presented without further comment.

County Secretaries' Department

THE September JOURNAL will be mailed August 25, and will contain the entire program for the Annual Meeting.

WHENEVER an interesting paper is read at your meetings, THE JOURNAL will appreciate your securing the manuscript for publication in a future issue. We need all the papers we can get.

DR. ALEX. R. CRAIG, Secretary of the American Medical Association, has accepted the invitation to be present and address the meeting of the county secretaries at Flint. This is another reason why you should make it a point to attend this meeting. You will be sure to profit by doing so.

TRY and enlist the efforts of your more intimate friends and make them your ambassadors charged with the duty of securing the application of the unaffiliated doctor. There are 1,000 phycians in the state who should become members of their county and state society. We want those who reside in your vicinity. Will you bring them in? The state society cannot exert its greatest influence until it is composed of 75 per cent. of the eligible doctors of the state. With your assistance we can attain this end.

THIS office is eager to receive your reports, criticisms and suggestions. May we not be favored by receiving your personal opinion on the organization work of the state and the conditions in your vicinity? Mutual endeavors will enable us to so perfect our organization that it will be of greater usefulness and potential power than ever. By getting our "heads together" we may be able to settle on a plan of concentrated effort that will be attendant with the attainment of our object; a better, larger, more profitable and influential state organization. We but await your enlistment.

THIS number is devoted, in a great measure, toward imparting what the members may expect to see and hear during the Annual Meeting at Flint, September 4 and 5. A goodly attendance is desired for this meeting, and we trust that each secretary will see that his county is fully represented by a large attendance. May we not ask you to drop a postal card to all your members during the last week in August, calling attention to the Annual Meeting, the desirability of having their society well represented and urging that they take a "couple of days off" and spend them in Flint. This cooperation is strongly urged. Do not forget to come yourself.

AUGUST and its humid days, the sick babies, the adult with a cholera morbus or dysentery, are not as a rule conducive toward putting one in a frame of mind calculated to stimulate you toward arousing enthusiasm among the doctors of your county in society work. Troubles of your own are believed sufficient excuse to lay back on your oars and rest awhile. Many of the societies have taken a recess during the summer months and organization work may be considered at a standstill. However this may be in your county, there are certain lines along which you may proceed, and by directing your endeavors at a "low speed" rate, you can, without very much effort, obtain a sufficient momentum during the next two months, so that when your meetings are again resumed you can "throw into high speed" and get off with a good start.

The cool of the evening may be utilized to take your family for a spin in your car to a neighboring town, where you may—if you make it a point—meet the local doctor who is a non-member. Be sure you have a blank membership application with you—every secretary should have a few of these on his person at all times—and after talking shop, touching on the topics of the day, deftly lead him up to society work and tell him what he is missing and what good he may derive by affiliating; then flash your application blank and get him to "sign up." This is one way in which you may remain active, and by pursuing this course this summer you will be enabled to present a goodly number of applications at your first fall meeting.

Then, again, when you meet the doctors who are members and in your "shop talks" they tell you of some of their cases that are of unusual interest, induce them to work them up into a paper and put them down on the programs for your meetings. Then, again, you will be ready for

your fall and winter meetings and you will not have to worry about whom to ask to read a paper for the next meeting.

These two suggestions may readily be complied with, and the exertion should not call forth any exhausting effort. Try it!

Book Notices

The Practical Medicine Series, 1913. General Surgery, Volume II. Edited by John B. Murphy, M.D., Chicago. Six hundred pages. Cloth. Price $2. The Year Book Publishers, 40 Dearborn Street, Chicago.

What has been said of the series in the review of Volume I is confirmed by this volume No. II. It is so complete that the reviewer would be required to devote this entire department in commenting on its contents and then he would be unable to do it justice. If the reader desires to be in possession of the recent and most accepted principles of general surgery, in a condensed, concise form, he should not fail to subscribe to this practical series.

The Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume II, No. 3 (June, 1913). Octavo of 185 pages, 62 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Published bi-monthly. Price per year: Paper, $8; cloth, $12.

Those who have not subscribed to this series cannot realize what they are foregoing in not having this work come to their desks. This number not only maintains the standard of former numbers, but also is of added value because of the imparting of valuable clinical observations that have been proven in Dr. Murphy's clinics. The favorable reception accorded to this work is an assurance that it supplies a need heretofore unfilled. Secure one copy and you will be desirous of obtaining every subsequent issue.

The Practical Medicine Series, 1913. Volume I. General Medicine. Edited by Frank Billings, M.S., M.D., Chicago, and J. H. Salisbury, A.M., M.D., Chicago. Three hundred ninety pages. Cloth. Price $1.50. Series of ten volumes $10. The Year Book Publishers, 40 Dearborn street, Chicago.

There probably does not exist a similar volume that contains so many practical abstracts of the progress made in general medicine as does this volume of this popular publication. It is a book that should be on the desk of every practitioner and by referring to it often he will be the recipient of much useful knowledge. Infectious diseases, diseases of the circulatory system, of the blood, ductless glands, metabolism and of the kidneys are covered in this edition and the modern opinions and recent investigations and observations are very fully covered.

Diseases of the Rectum and Pelvic Colon. By Martin L. Bodkin, M.D., Rectal Surgeon at St. Mary's Hospital, New York. 416 pages. Cloth. Numerous illustrations. E. B. Treat & Co., 241-3 W. Twenty-Third St., New York City. Price, $2.50.

A book, the result of the zealous purpose on the part of the author to simplify the descriptions of the common diseases of the colon, sigmoid, rectum and anus and to present the description in the plainest and most direct language. The subject of hemorrhoids is given particular attention, as is also "The Relation of Rectal Diseases to Gynecology." The work gives not only his personal views, born from a large experience, but also outlines the opinions and methods of other authorities on the subject. He who is desirous of treating diseases of the rectum cannot afford to forego the possession of this volume. It merits a favorable reception.

Hygiene and Sanitation. A text-book for nurses. By George M. Price, M.D., director Joint Board of Sanitary Control; director of Investigation, New York State Factory Commission. 12mo; 236 pages. Cloth, $1.50 net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

The duties of the trained nurse are no longer limited to the simple care of the sick. She now enters the field of prophylaxis and her assistance in preventative medicine has become invaluable. She is an important factor in social, municipal and public health work. Every day she is presented with opportunities to impress on those with whom she comes in contact some of the principles of hygiene and their practical application. This new book from the pen of Dr. Price gives to her a knowledge of the elements of hygiene in its various branches. It is a work that is commended to the nurse and to all persons interested in the prevention of the spread of disease. Its text makes it very suitable and of value for home use. The physician may read it with profit; further, he can do no better than to recommend it to his staff of nurses; and lastly, he may well urge that many of the fathers and mothers of the families in his practice be urged to secure this volume and study its teachings. It should be in the library of every training school for nurses.

A Text Book of Biology. For Students in Medical, Technical and General Courses. By William Martin Smallwood, Ph.D. (Harvard), professor of Comparative Anatomy in the Liberal Arts College of Syracuse University, and in charge of Forest Zoology in the New York State College of Forestry at Syracuse. Octavo, 285 pages; illustrated with 243 engravings and thirteen plates, in colors and monochrome. Cloth, $2.75 net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

Biology is now recognized as one of the fundamental sciences in the study of medicine and most of the medical colleges require either a knowledge of it for entrance, or include it as a part of the preliminary instruction. A broader interest has recently been awakened in this subject than ever before. It is therefore timely that a new text-book to meet the needs of the student should make its appearance. This volume is one of high standard and is an excellent instruction book. We congratulate the publishers on the form in which it is produced, its numeorus excellent illustrations and the author in producing a book so consistent with the modern ideas and opinions on the subject. The method the author has followed leads the reader and student to think for himself and cultivate his powers of observation. To the physician who graduated before biology was generally taught, this work is cordially commended as being of especial interest and value. It certainly merits the consideration of every man engaged in the scientific pursuit of his profession.